Title

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Permalink

https://escholarship.org/uc/item/6906b6tf

Journal

American Indian Culture and Research Journal , 22(1)

ISSN

0161-6463

Authors

Chase-Dunn, Christopher
Hall, Thomas D.

Publication Date

1998

DOI

10.17953

Copyright Information

Peer reviewed

World-Systems in North America: Networks, Rise and Fall and Pulsations of Trade in Stateless Systems

CHRISTOPHER CHASE-DUNN AND THOMAS D. HALL

INTRODUCTION

A great deal has been written about the indigenous peoples of North America before the colonization and conquest by Europeans. In this paper we utilize a theoretical approach that was originally developed to explain developmental differences among countries in the global system to try to understand what had happened in precontact North America. Why take a theory, or more precisely a perspective, originally developed to account for that colonizing effort and apply it to precolonial conditions? There are several reasons, which can be bundled into two groups: those that address explanations of long-term social change in the social sciences and those that address the problem of understanding the colonial encounter, its impacts on Native peoples, and the efforts to curtail those impacts. We begin with the latter because the former are the concern of the bulk of this article.[1]

Christopher Chase-Dunn is professor of sociology at Johns Hopkins University. Thomas D. Hall is Lester M. Jones Professor of Sociology at DePauw University. In addition to other writings, Chase-Dunn and Hall have collaborated on several articles and coauthored *Rise and Demise: Comparing World-Systems* (Westview, 1997).

Most of the accounts about precolonial North America attempt to address the issue raised by Eric Wolf in *Europe and the People without History*—that European historians have tended to view history as beginning with the arrival of Europeans. One of Wolf's points, strongly echoed by Brian Ferguson and Neil Whitehead, is that this is more than a matter of bad taste or Eurocentrism. It leads to bad, that is, wrong, theory. Jim Blaut argues that such Eurocentrism renders all social theory suspect. One way to address this problem is to examine, or in some cases reexamine, precontact history in ways that try to correct for those Eurocentric processes. This is a daunting and complex task, one that will take many iterations. Still, a more complete understanding of colonial encounters and their consequences can only be reached through a clearer comprehension of the dynamics of all the peoples involved.[2]

But there is even more at stake. If a widely applicable, even universal, social theory is possible—and many argue that it is not—it must include all humans and their organizations, not just some subsample. All too often, the story and explanation of what has happened has been transmuted into what must have happened and even into what is "natural." This imputed inevitability has then been harnessed to justify and even celebrate the current status quo and the righteousness of those currently in power and to justify wrongs done to others. Typically, such theorizing has been fundamentally flawed by being based on a very narrow sample of human groups.

Thus, we must study more widely to understand what other possibilities might have been—and even others that might yet be—and to understand why paths taken were chosen, whether consciously or not. The study of the Americas and their peoples offers an opportunity to examine some of the other possibilities. One of our goals in this article is to entice scholars whose expertise is North America to use their knowledge and understanding to contribute to building a broader and less Eurocentric social theory. We argue that such theorizing will broaden and deepen our understanding of colonial encounters and their consequences. We readily acknowledge that this is a daunting task. Some will even argue that it is a fool's errand. Obviously, we disagree. We further acknowledge that our approach to this task is only one of many possible approaches.

This brings us to our own purposes, which are to improve the social scientific understanding of long-term social change.

Our use of the term *social change* includes economic, political, cultural, and ideological change. In broad strokes, we have argued that some of the major causes of social change are found in the interactions of groups or societies. We argue further that such interactions have had patterns and regularities that can be discerned. These patterned interactions form social structures larger than the conventional "society" or "group." We call these structures "world-systems" and have noticed that all the world-systems we have examined are built on networks that exhibit various sorts of cyclical and secular dynamics. Our study of North America focuses on these cyclical processes and offers evidence that world-systems existed in precolonial North America, and that they had cyclical and secular dynamics. However, these world-systems bear at most a vague family resemblance to the European-based "modern world-system" analyzed by Immanuel Wallerstein.[3]

We argue that in addition to any improved understanding of long-term social change, this effort lays groundwork for reexamination and rethinking the colonial encounter. It may be viewed not only as a clash of cultures and civilizations, but also an encounter among different world-systems which vastly altered the dynamics of all. We proceed by briefly recapitulating the efforts to generalize the world-systems perspective beyond Europe in time and space, and then outline a suggestive sketch of the world-systems in North America, specifically the part that became the United States. This restriction is not theoretically motivated or justified, but rather due to the more prosaic limitations of our knowledge and our attempt to keep an already unwieldy discussion manageable. We finish with a discussion of some of the implications of our reexamination.

AN EXCURSUS ON TERMINOLOGY

Before beginning, we need to address some issues of terminology. One of the anonymous commentators on this article said, "I have never heard a good explanation for why we stick with chiefdoms for native peoples, rather than nations." The implied question is both legitimate and important. Culture and identity politics have become very highly contested topics recently. Within these debates the names of indigenous peoples—both generic labels and specific group names—are particularly contested.[4] Ward Churchill has argued forcefully for

"people" or "nation" to replace "tribe" because of the frequent association of the latter term with backwardness or inferiority. Similarly, Stewart Rafert, Alison Bernstein, and Tom Holm report the use of the title "chief" to be an insulting label for Native Americans. Thus, it is incumbent on us to explain why we persist in the use of terms such as *chiefdom, big man,* and (social) *evolution.*[5]

One obvious, and the least important, reason is because these terms are already in wide use and familiar. Second, and somewhat more important, we are drawing links to literatures in the social sciences that use these terms in rather precise ways—though in our opinion without intending pejorative connotations. A third reason is tactical. We argue that rather than cave in to those who would attach pejorative meanings to terms and change terminology, it is better to confront such attachments directly. One need only look at the history of terms for people of African ancestry in the United States to see how racism and racists perpetually attach pejorative connotations to successive terms introduced to instill pride. The fourth, and most important reason for us, is that we are trying to avoid both reading the past into the present and the present into the past. This requires us to draw distinctions which will enable us to discern and describe changes.

To label chiefdoms *nations* confounds a profoundly modern form of social organization with a much older and very different form of social organization. Such blurring makes the already formidable task of studying social change nearly impossible.[6] Similarly, the term *nomadic* is popularly misunderstood to mean "roaming randomly," rather than what is well known to anthropologists and others to mean "travel, often in fixed circuit, within a circumscribed area." This term becomes problematic in the early contact period when many groups changed their adaptive strategies.

Finally, we also seek to rehabilitate the term *evolution.* As we have noted, evolutionary thinking often has been harnessed to justify a variety of different present conditions, typically, endorsing the powers of existing elites. This is a profound misuse of the term. We use *evolution* in a narrower and more precise way to mean "social change in response to circumstances." We usually modify the word by prefacing it with *social* to emphasize that we are discussing social changes, not biological changes. Similarly, we use *historical evolution* to emphasize that we are referring to processes that respond to actual historical

conditions, and not some unilinear, teleological process. Our goal is to uncover any patterns in these processes.[7]

THE COMPARATIVE WORLD-SYSTEMS PERSPECTIVE

The world-systems perspective emerged as a theoretical approach for modeling and interpreting the expansion and deepening of the European system as it engulfed the globe during the past five hundred years.[8] The idea of a core-periphery hierarchy composed of "advanced" economically developed and powerful states dominating and exploiting "less developed" peripheral regions has been a central concept in the world-systems perspective. In the last decade the world-systems approach has been extended to the analysis of earlier and smaller intersocietal systems. Andre Gunder Frank and Barry Gills have argued that the contemporary world system is a continuation of a five-thousand-year-old world system that emerged with the first states in Mesopotamia. We have modified the basic world-systems concepts to make them useful for a comparative study of very different kinds of systems. We include small intergroup networks composed of sedentary foragers, as well as larger systems containing chiefdoms, early states, agrarian empires, and the contemporary global political economy in our comparison.[9]

Our comparative world-systems perspective is designed to be sufficiently general to allow comparisons between quite different systems. We define world-systems as "intersocietal networks in which interactions (trade, warfare, intermarriage, information, and so forth) are important for the reproduction of the internal structures of the composite units and importantly affect changes that occur in these local structures."[10] Different kinds of interaction often have distinct spatial characteristics and degrees of importance in different sorts of systems. We hold that the question of the nature and degree of systemic interaction between two locales is prior to the question of core-periphery relations. Indeed, we make the existence of core-periphery relations an empirical question in each case, rather than an assumed characteristic of all world-systems.

Spatially bounding world-systems necessarily proceeds from a locale-centric beginning rather than a whole-system focus. We note that interaction networks, while always intersocietal, have not always been global in the sense that actions in

one region had major and relatively quick effects on distant regions. When transportation and communications covered short distances, the world-systems that affected people were small. Thus, "world" means more or less self-contained, not global. Only the modern world-system, in the late twentieth century, is truly global.

We use the notion of "fall-off" of effects over space to bound the networks of interaction that importantly impinge upon any specific location. In other words, if there are effects, or consequences of sustained interaction, they decrease through space. The places where the fall-off, or decrease, is sharp or steep is in effect a boundary. The world-system of which any locality is a part includes those peoples whose actions in production, communication, warfare, alliance, and trade have a large and interactive impact on that locality. It is also important to distinguish between endogenous systemic interaction processes and exogenous impacts that may importantly change a system, but are not part of that system. Because maize diffused from Mesoamerica to eastern North America, for instance, does not mean that the two areas were part of the same world-system. A virulent microparasite that infects a population with no immunity and ravages that population does not necessarily mean that the region from which the microparasite came and the region it penetrated are parts of a single interactive system. Interactions must be *two-way* and *regularized* to be systemic.

In most intersocietal systems, several important networks of different spatial scales impinge on any particular locale: information networks; prestige goods networks; political/military networks; and bulk goods networks. The largest networks are those in which information travels. Information is light and travels a long way, even in systems based on down-the-line interaction. We call these "information networks" (INs). A somewhat smaller interaction network is based on the exchange of prestige goods or luxuries that have a high value-to-weight ratio. Such goods travel far even in down-the-line systems.[11] We call these "prestige goods networks" (PGNs). The next largest interaction net is composed of polities that are allying or making war with one another. These we call "political/military networks" (PMNs). And the smallest networks are those based on a division of labor in the production of basic everyday necessities such as food and raw materials. We call these "bulk goods networks" (BGNs).

Figure 1 illustrates how these interaction networks are spatially related in many world-systems. The PGN and IN are typically of the same scale. They may encompass one or more PMNs of various sizes (two are shown in figure 1). Each PMN may, in turn, encompass one or more BGN (only one is shown in figure 1). Each PMN is typically considerably larger than the BGN(s) it encompasses. We emphasize that figure 1 is an abstraction. In any actual world-system the relative sizes and numbers of the networks are an empirical matter. Indeed, a major theoretical and empirical problem is how changes in one network affect the others.
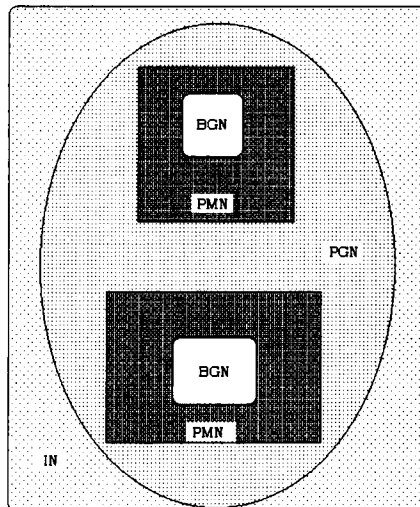
Figure 1: Spatial Boundaries of World-System Networks

The first question for any specific location concerns the nature and spatial characteristics of its links with these four interaction nets. This question must be considered first because one region must be linked to another by systemic interaction in order for core-periphery relations to be present.

The spatial characteristics of these networks clearly depend on the costs of transportation and communications, and whether or not interaction is only with neighbors or there are regularized long-distance trips. These factors affect all kinds of interaction; thus we expect the relative sizes of the networks to approximate what is shown in figure 1. As an educated guess we would suppose that fall-off in the PMN generally occurs after two or three indirect links. Suppose group A is fighting

and allying with its immediate neighbors and with the imme-
diate neighbors of its neighbors. Its direct links therefore
extend to the neighbors of the neighbors. But how many indi-
rect links involve actions that will importantly affect this origi-
nal group? While the number of such links could be indefinite,
we guess that the fall-off is so steep that only two or three indi-
rect links will reach the boundary of the PMN. These links will
be longer in larger polities, but will probably remain only two
or three. This, of course, is only a working hypothesis. The
problem is amenable to empirical investigation.
    We divide the conceptualization of core-periphery relations
into two analytically separate aspects: core-periphery *differentia-
tion* and core-periphery *hierarchy*. core-periphery differentiation
exists when two societies are in systemic interaction with one
another and one of these has a higher population density and/or
greater complexity than the other. The second aspect, core-
periphery hierarchy, exists when one society dominates or
exploits another. These two aspects often go together because a
society with greater population density and complexity usually
has more power than a society with less of these, and so can effec-
tively dominate or exploit the less powerful neighbor. But there
are important instances of reversal (for example, the less dense,
less complex Central Asian steppe nomads exploited agrarian
China).[12] We make this analytical distinction so that the actual
relations can be determined empirically and wish to point out
that the question of core-periphery relations needs to be asked at
each level of interaction. It is more difficult to project power over
long distances, and so we should not expect to find strong core-
periphery hierarchies at the level of information or prestige
goods networks.

WORLD-SYSTEM CYCLES:
RISE AND FALL AND PULSATIONS

Comparative study reveals that all world-systems exhibit cycli-
cal processes of change. We focus here on two major cyclical
phenomena: the rise and fall of large polities, and pulsations in
the spatial extent and intensity of trade networks. What we call
"rise and fall" corresponds to changes in the centralization of
political/military power in a set of polities. It is a question of
the relative size of polities and the distribution of power across
a set of interacting polities. We note that all world-systems

which contain hierarchical polities (chiefdoms, states, empires) experience a cycle in which relatively larger polities grow in power and size and then decline. This applies to interchiefdom systems as well as interstate systems, to systems composed of empires, and to the rise and fall of hegemonic core powers in the modern world-system (e.g., Britain and the United States).

Though very egalitarian and small-scale systems such as the sedentary foragers of Northern California do not display a cycle of rise and fall, they may experience other related sorts of cycles.[13] These can include increases and decreases in the average size of polities, changes in the rate of population growth, increases and decreases in population density, changes in the degree of inequality within social groups (or societies), changes in the degree of complexity regarding specialized occupations, and changes in the degree to which polities are tightly bounded versus more open and fluid interactions among groups. These latter cycles we collectively label "pulsations." We restrict the phrase *rise and fall* as defined above. Both rise and fall and cyclical fluctuations in these other features and secular trends are of great interest to students of social change.

We define pulsation as "cyclical expansions and contractions in the spatial extent and intensity of trade networks." Different kinds of trade (especially bulk goods trade versus prestige goods trade) may have different spatial characteristics. Different sorts of trade can also exhibit different temporal sequences of expansion and contraction. It should be an empirical question in each case as to whether or not changes in the volume of trade correspond to changes in spatial extent.

Our claim that these cyclical processes of rise and fall and pulsation occur in very different kinds of systems needs evidence to sustain it, and in turn it raises a host of other questions. Are the underlying mechanisms that generate these sequences similar in different kinds of systems? What are the temporal and causal relations among the different kinds of cycles? What is the relationship between the rise and fall of large polities and changes in the degree of inequality within polities, and are these relationships similar across different kinds of world-systems?

The simplest hypothesis regarding the temporal relationships between rise and fall and pulsation is that they occur in tandem. Whether or not this is so, and how it might differ in distinct types of world-systems, presents a set of problems that are amenable to empirical research. This is really the old issue

about whether the flag follows trade or trade follows the flag. It is our hypothesis that prestige goods trade leads the flag and that both networks expand more or less concurrently. It is possible to study the actual temporal changes in the spatial extent of PMNs and PGNs and thus to test empirically the hypothesis of synchronous expansion and contraction.

We argue that the causal processes of rise and fall differ depending on the predominant mode of accumulation. The rise and fall of empires exhibits different features from the rise and fall of hegemonic core states because tributary accumulation involves different strategies than capitalist accumulation. One major difference between the rise and fall of empires and the rise and fall of modern hegemons is in the degree of centralization achieved within the core. Tributary systems alternate back and forth between a structure of multiple and competing core states on the one hand and core-wide (or nearly core-wide) empires on the other. The modern interstate system experiences the rise and fall of hegemons, but these never take over the other core states to form a core-wide empire. This is because modern hegemons are pursuing a capitalist, rather than a territorialist, form of accumulation.[14]

Analogously, rise and fall works somewhat differently in interchiefdom systems because the institutions that facilitate the extraction of resources from distant groups are less fully developed in chiefdom systems. David G. Anderson's study of the rise and fall of Mississippian chiefdoms in the Savannah River valley provides an excellent and comprehensive review of the anthropological and sociological literature about what Anderson calls "cycling," the processes by which a chiefly polity extended control over adjacent chiefdoms and erected a two-tiered hierarchy of administration over the tops of local communities. At a later point, these regionally centralized chiefly polities disintegrated back toward a system of smaller and less hierarchical polities.[15]

Chiefs rely more completely on hierarchical kinship relations, control of ritual hierarchies, and control of prestige goods imports than do the rulers of true states. These chiefly techniques of power are all highly dependent on normative integration and ideological consensus. States developed specialized organizations for extracting resources that chiefdoms lacked—standing armies and bureaucracies. Also, states and empires in the tributary world-systems were more dependent on the projection of armed force over great distances than mod-

ern hegemonic core states have been. The development of commodity production and mechanisms of financial control, as well as further development of bureaucratic techniques of power, have allowed modern hegemons to extract resources from faraway places through means other than force, and thus with much less overhead cost.

Studies of the sizes of Eurasian cities and the territorial sizes of empires have shown only a weak correlation between changes in the size of the largest city, the city-size distribution. This is very weak support for the hypothesis of simultaneous trade and political/military pulsations, but it suggests that further investigation is warranted.[16]

We argue that population growth in interaction with the environment, productive technology, and social structure produces social evolution that is marked by cycles and periodic jumps. This is because any world-system varies around an equilibrium or mean due both to internal instabilities and environmental fluctuations. Occasionally, on one of the upswings, a system solves its problems in a new way that allows substantial expansion. We want to explain expansions, evolutionary changes in system logic, and collapses. That is the point of comparing world-systems.[17]

We have yet to investigate systematically how these cycles interact with each other in stateless systems. Neither have we theorized driving mechanisms for all of them in various types of world-systems (kin ordered, tributary, capitalist). We seek to use this examination of aboriginal North America to begin these tasks.

STATELESS NORTH AMERICAN WORLD-SYSTEMS

In earlier work we have examined systemic cycles and their relations with one another. What are the similarities and differences regarding systemic cycles between stateless systems and larger, more complex world-systems in which there are states and empires? To address this question, we will present an overview of the recent literature, mainly by anthropologists and archeologists, about pre-Columbian world-systems in the part of North America that became the United States. We will also review studies of trade by archeologists, doing no more than mentioning the now-voluminous literature about the Mesoamerican world-system. State-based systems emerged in

Mesoamerica, but not in the part of North America that became the United States.

Important literature about the incorporation of indigenous societies of North America into the modern Europe-centered system literature sheds some light on the kinds of world-systems that already existed when the Europeans came. Indeed, several studies show clearly that many different kinds of local and regional systems existed in North America before they were disrupted and incorporated by the Europe-centered modern world-system.[18]

If we accept the group-centric approach to bounding world-systems discussed above, it does not make sense to ask *how many* world-systems there were in North America. Indeed, if every group interacts with neighboring peoples, no major breaks will occur in interaction across space. Thus, there were as many "systemic wholes" as there were groups because each group had a somewhat different set of interactions.

This is not to say that differential densities of interaction did not exist. Natural barriers such as deserts, high mountains, and large bodies of water increased the costs of communication and transportation. However, ethnographic and archeological evidence reveals that most of these geographical "barriers" did not eliminate interaction. In California, travel across the High Sierra was closed by deep snow in the winter. But when the snow thawed, regularized trade across this high range resumed. Natural barriers do affect interaction densities, but in most cases they do not eliminate systemic interaction.

Stephen Kowalewski's suggestion that culture areas—the culturally similar regions designated by anthropologists (California, the Pacific Northwest, the Southwest, etc.)—can be equated with world-systems is untenable from a group-centric point of view because important interactions frequently occurred across the boundaries of these culture areas. Nevertheless, his organization is convenient to follow in discussing how the world-systems in these traditional culture areas were similar to or different from one another. The literature on trade networks by archeologists is usually organized into discussions of these culture areas, but there have been more studies of trade interactions between the different culture areas.[19]

Our subject here is the last twelve thousand years of human social evolution in the part of North America that eventually became the United States. (As we noted above, this restriction is pragmatic, not theoretical. All of the Americas should be

included, but that is more than we can master at this time.)
Archeological evidence suggests that humans came across the
Aleutian land bridge at least thirteen thousand years ago. A
recently discovered encampment of hunter-gatherers near
Monte Verde, Chile, complete with chunks of mastodon meat,
has been firmly dated at 12,500 B.P. (10,500 B.C.E).[20] The conven-
tional argument asserts that the land route was difficult to pass
before about twelve thousand years ago because of the large
Pleistocene glaciers. While it is possible that maritime-adapted
peoples moved along the coasts, most archeologists discount
the possibility of early voyaging across the open ocean.[21]

In the region that became the United States, large distinc-
tively fluted stone spear points called Clovis points[22] were used
over a wide region of North America. Archeologists think that
these peoples—typically called Paleoindians—who lived dur-
ing the epoch from 10,000 B.C.E to 8,000 B.C.E., were small
groups of big-game hunting nomads who ranged over wide
territories. One important method that archeologists use to
study trade among such peoples is the chemical "sourcing" of
lithic materials, which makes is possible to identify the original
source from which a piece of rock was quarried. Chemical "fin-
gerprinting" allows archeologists to determine that a projectile
point found in one location was made of material from a par-
ticular other location.[23] The problem is that we cannot tell from
archeological evidence whether the object was traded down
the line or procured directly from the source. In the case of the
Paleoindians, archeologists disagree about whether groups
traded among themselves. Many Clovis points made of stone
that traveled great distances have been found. But if the
Paleoindians ranged widely—as most archeologists suggest—
it is possible that they procured the materials directly from the
quarries rather than by trading for them.

We are reticent to extend the concept of world-systems to
regions that include only nomads who have no contact with
sedentary peoples. Territoriality seems to be a fundamental
feature of those intersocietal interactions that constitute world-
systems. Yet nomads, even those who range widely as the
Paleoindians did, do compete for resources, exchange informa-
tion, and possibly trade.

Another issue for comparing world-systems is the multi-
culturality of intersocietal interactions. In most world-systems,
the interacting polities differ somewhat from one another cul-
turally. But this is not the case for all regional systems that seem

to operate as world-systems. For example, the Hawaiian archi-
pelago shares a general Polynesian ancestral culture, and yet
regional differentiation, interpolity competition, rise and fall of
larger polities, and local and inter-island core-periphery rela-
tions are all features of the Hawaiian world-system.[24] This issue
is raised in the case of the North American Paleoindians by
Kowalewski's claim that these groups shared a single conti-
nental-wide culture. Kowalewski's argument is based on the
widespread use of similar styles of projectile points.[25] But most
archeologists depicting the peopling of the Americas posit mul-
tiple migrations by culturally different groups.
    It is possible that the first immigrants were from culturally
similar groups in Northeastern China, as suggested by tool kit
similarities. But it is also possible that different peoples shared
similar tool kit styles, while also having important linguistic
and cultural differences. In any case, it would cause confusion
to apply the world-systems concept to nomads and then to
characterize all of North America as being a single world-sys-
tem in Paleoindian times based on the idea of cultural homo-
geneity.[26] The fall-off of the consequences of events in one
nomadic band for distant groups was probably rather steep,
and so it would be more sensible to analyze systems of imme-
diately interacting nomadic groups if we are to try to use
world-systems concepts to understand Paleoindians.
    The general model of social evolution which has been
applied to North America, as elsewhere, is that groups migrat-
ed to fill the land, then population increased, and trade and
complexity emerged. This general sequence is implied in the
periodizations that archeologists have developed to character-
ize the cultures for which they find evidence in North America.
In every region, the Paleoindian period (10,000 to 8,000 B.C.E.)
is followed by the Archaic period, in which groups became
more diversified hunter-gatherers and restricted migrations to
a smaller region. Sometimes distinctions are made between the
Lower and Upper Archaic. The Archaic lasts longer in some
regions than in others. After the Archaic, the periodization dif-
fers from region to region. For example, in the Southeast the
Archaic is followed by the Woodland (700 B.C.E. to C.E. 900)
divided into Early, Middle, and Late Woodland periods. Then
follows the Mississippian period from C.E. 900 to 1450, where-
as in California the Archaic (8,000 B.C.E. to 550 C.E.) is followed
directly by the Emergent period, which begins in 550 C.E. and
ends at contact (around 1800).[27]

The general picture is one of increasing population density and the development of more complex societies in each region. But this picture is complicated when we consider cyclical processes of rise and fall, changes in the patterns of interaction within and between regions, and uneven development with regard to time and space. These latter are important for answering the world-system questions we have raised.

Important trade goods were widely scattered in prehistoric North America and have been found in archeological sites far from their point of origin. For example, copper that probably originates near Lake Superior has been found at Archaic sites on the East Coast. Recent work by Jonathan Ericson and Timothy Baugh summarizes the archeological evidence and interpretations of the relationship between changing trade networks and the rise and fall of societal complexity in North America. They demonstrate that the two processes are correlated.[28]

The domestication of plants was accomplished in at least four different locations in the Americas. Seeds spread from their locus of origin by means of migration of peoples and trade. Seeds were adapted by local groups to local climatic and geological conditions. Independent development of domesticated plants was accomplished between 2000 and 1000 B.C.E.—and possibly several millennia earlier—in the Midwest. The planting of maize spread from Mexico into much of the region that became the United States by 300 C.E., but horticulture did not spread into California or into the Pacific Northwest before the arrival of the Euro-Americans.

THE MIDWEST

As planting was adopted populations increased and became less nomadic. In the Midwest more complex, larger-scale systems emerged. Horticulturists in the Midwest had developed indigenous cultigens (e.g., squash, sunflowers) that had not diffused from Mesoamerica.[29] The first indication of social complexity was the emergence of the Adena mortuary complex in Ohio in about 500 B.C.E. and the similar, but stylistically different, Morton Complex of central Illinois. These developments involved ritual worship of the dead with certain archeological visible features: burial mounds, certain types of pottery with particular iconography and, for Adena, a distinctive type of clay smoking pipe. A change toward more elaborate burials is

understood by archeologists to indicate the emergence of an elite. Elaborate burial rituals probably indicate the symbolization of important lineages and their links with revered ancestors. This phenomenon is seen to have spread from its original locus in the Ohio River valley to other areas.[30]

Archeologists disagree about how this worked. Some think that people migrated from the Adena core.[31] Others think that Adena-like rituals were adopted by distant groups. The latter interpretation is now more favored, and it corresponds to the model proposed by Caldwell's idea of "interaction spheres" in which centers ("hot spots" where cultural innovations occur) influenced distant peripheries where the innovations were adopted.[32] The archeological evidence shows repeated instances in which cultural features emerged in one region and then appeared later in other regions.

What is not clear from the archeological evidence is whether these cultural features spread because of the migration of people, because distant peoples were influenced to adopt the customs by some diffusion process involving trade, because of ideological influence, or because of the migration of a few influential individuals. This is a problem that recurs as we try to sort out what caused the emergence of complexity and hierarchy. Diffusion, parallel evolution, and diaspora are the three possibilities, but the reality was probably some complicated combination of all three. It is obvious that diffusion was not an automatic process since cultural features did not spread evenly from their point of origin. They were adopted in some regions but not in others, and often there were large expanses in-between originators and adopters that seem to have been untouched. The Delmarva Adena, a society far from Ohio and quite different from its immediate neighbors, adopted the rituals of worshipping the dead and obtained imported goods from the Adena heartland.[33] Local circumstances must have facilitated the adoption of this foreign religious software, but we cannot be sure just what these local conditions were.

After the emergence, spread, and decline of the Adena mortuary cult another more elaborate set of mortuary rituals emerged in the Ohio River valley by about 100 C.E. Though styles and burial practices varied greatly within the heartland of the Hopewell interaction sphere, in all of them an important distinction was made between elites and commoners. Much larger burial mounds were built. The Hopewell complex traded and spread mostly to the South and Southeast.[34] The same

problems of interpretation exist as with the case of Adena. Was this spread due to diffusion or migration? And what were the local conditions that allowed some societies to be influenced while others were not? The Hopewell style dissipated, as had Adena. Sites that were heavily populated and in which there were concentrated settlements became more dispersed, and in some regions whole areas were abandoned. This was a definite case of rise and fall in which centers of greater population density and settlement size emerged and then declined. It also appears that pulsation, the expansion and intensification of trade, occurred largely in tandem with the rise and fall.[35]

After 900 C.E. a new interaction sphere that archeologists call Mississippian emerged along the central rivers of the North American mid-continent. This much more hierarchical cultural complex involved rituals that symbolized the sacredness of certain lineages and an important regional economy in which prestige goods were traded over long distances. Several large centers were established, usually at sites that were important for the regional and interregional trade networks. By the twelfth century a complex chiefdom (or early state) had emerged at Cahokia. Cahokia was located on the Mississippi River near its confluence with the Missouri River in what is now east St. Louis. It was the preeminent center of what Peter Peregrine has called the Mississippian world-system. The population size of Cahokia proper was probably about 10,000, whereas the American Bottom—the region immediately surrounding Cahokia—probably held a population of about 40,000.[36]

Whether the polity at Cahokia should be called a complex chiefdom or an early state is a matter of considerable dispute. Patricia O'Brien characterizes the polity at Cahokia as the "Ramey state." She reports that one of the excavated burial mounds contained the remains of seventy young women who were apparently sacrificed in a single ceremony in connection with the death of a sacred chief. This scale of ritual violence indicates a rather hierarchical system, but we have no way of knowing whether or not specialized non-kin-based institutions of regional control existed at Cahokia. Military specialists and a bureaucracy dedicated to regional control are the important organizational features that distinguish between a complex chiefdom and a state, according to the definition employed by Allen Johnson and Timothy Earle.[37] But whether or not these existed at Cahokia, it was a large, impressive, and quite hierarchical polity. If not a state, at its peak it may have been on the

verge of becoming one.[38]

There were other large centers in the Mississippian system, especially Moundville, on the Black Warrior River in Alabama and Spiro, Oklahoma. And there were hundreds of smaller chiefdoms that utilized the cultural equipment identified as Mississippian. Cahokia declined well before the arrival of the Europeans, but the remnants of its hierarchical kinship system were observed by European explorers in the institutions of the Natchez Indians, who continued to commemorate the death of a sacred chief by ritually sacrificing his family and friends.

Many issues about the nature of the Mississippian system are unresolved. Peter Peregrine strongly contends that the prestige goods system model explains the rise and fall of the Mississippian system. On the other hand, Stephen Kowalewski argues that prestige goods are essentially symbols of power, and they do not work as mechanisms for controlling social labor in the absence of other, more compelling, types of power. Kowalewski also contends that warfare was an important part of the dynamics of rise and fall in the Mississippian system. It is interesting in this light that Anderson reports that as the De Soto expedition was retreating down the Mississippi in 1543 it was "Harassed and nearly overwhelmed by fleets of war canoes," and "lost more men in this battle than in any other they fought on land."[39] Peregrine summarizes his perspective as follows:

> The lineage-focused social organization apparent in Late Woodland settlement patterns may have fostered competition between lineage heads and encouraged further social changes ... they may have included the development of sumptuary rules restricting consumption of higher-order goods to elders, new mechanisms of labor control for the manufacture and transportation of prestige-goods, and perhaps new forms of political structure or alliance for solidifying the control of trade routes....
>
> These social transformations set the stage for a re-emergence of higher-level political leaders in the Early Mississippian period, and intensification of production ... to support their local leaders in competitive exchanges ... and hence a better opportunity to socially reproduce themselves....

> ... leaders ... located at nodal points on trade routes ... may have been able to control those routes and the goods flowing through them. Population would have been attracted to leaders who offered greater access to prestige-goods, and hence better opportunities to socially reproduce.[40]

Stephen Kowalewski criticizes the idea of a prestige goods system as follows:

> Long-distance symbolic interaction can operate to transfer value from one point to another. In aboriginal North America, a returned pilgrim, a vision quester, one who acquires a new dance, or one who owns the rights to display a crest could acquire some prestige, power, or wealth useful in internal competition and perhaps useful for external recognition. Symbolic objects convey information about the social relations of givers and receivers. As symbols the stuff is completely arbitrary, except that items should be rare, light, exotic, or crafted ... knowledge itself may be a prestige good.... The informational value of a symbol ... may not necessarily be mutually recognized by all parties in exchange. All that may be required is that the parties understand that the symbol is valuable in some way..... The point is that ... preciosities ... have values so arbitrary that they must be continually reaffirmed by something else, which in my opinion is power.[41]

Both Kowalewski and Peregrine agree that power must necessarily stand behind prestige goods. Kowalewski's critique seems to assume that the prestige-goods system theory requires that prestige goods operate in the absence of other sorts of power, either internally or across group boundaries. Rather, what is claimed is that control over prestige imports can facilitate the rise to power of a local elite. Jonathan Friedman also argues that loss of control over prestige goods trade can cause stratified hierarchies based on this control to fall.[42] Symbolic exchanges or ritual hierarchies are not likely to sustain domination or exploitation of one society by another in

the absence of other forms of power such as military force or the monopoly of the supply of some more basic good such as food or raw materials needed for the everyday life of most members of the society. Ritual hierarchies are easily overturned if they are not backed by something else.

What about core-periphery relations in the Mississippian system? It is unclear how far the power of large centers like Cahokia and Moundville extended, and what means they used to draw resources from distant hinterlands. Kowalewski mentioned the importance of warfare in the Mississippian system, but this was thought to be primarily a matter of conflict among neighboring chiefdoms. No one has portrayed Cahokia or Moundville as the center of military empires of the sort that the Aztecs constructed. And, as discussed above, ritual superiority is not a sufficient basis for extracting surpluses from distant societies. It is possible that the Mississippian centers gained from their nodal locations on trade routes and that they exported some goods to distant societies in return for other goods, but most of the exchange in this system would have been reciprocal gift-giving among elites of different polities. It is doubtful that true markets existed. Thus, it is unlikely that a hierarchical division of labor based on unequal exchange extended very far from the direct power of the core chiefdoms.[43]

Dincauze and Hasenstab argued that Iroquoian tribe-formation—the establishment of matrilineal longhouses—was caused by long-distance interaction with the Mississippian centers.[44] This hypothesis was met with derision by the old guard of site-specific archeologists. The controversy is reviewed by Peregrine who, despite his call for examining the patterns of large macroregions, finds timing problems with the hypothesis that interaction with Mississippian centers caused Iroquoian development.[45] It is likely that information flows and some trade goods did connect these distant regions, but were these connections strong enough to cause important social changes?

This case differs from the Delmarva Adena case in that the Iroquois did not adopt rituals from the Mississippian core. Certainly, local conditions were important to the emergence of complexity, as they were elsewhere. And simultaneity does not prove causality. In this case, we see only a somewhat synchronous rise in two distant areas, which might have occurred by accident.

Two sets of information, however, may breathe new life into this and other controversies. First, David Anderson's study

of Mississippian chiefdoms in the Savannah River valley is a
valuable contribution to our knowledge of how the system
worked far from the large centers. His evidence shows that the
cycle of the rise and fall of chiefdoms occurred in the periphery
as well as in the core. Based on documents from De Soto's
explorations, he argues, "Coosa and Cofitechequi were known
(and either feared or respected!) by societies hundreds of kilo-
meters away. It seems eminently reasonable to assume that
eleventh- and twelfth-century Cahokia, sitting astride the con-
tinent's major waterway, would have had a similar, if not vast-
ly greater, reputation and impact on its surroundings."[46]

This statement was made in a discussion about the impacts
of Cahokia on southeastern chiefdoms, not one about the
Iroquois. Still, if knowledge (and fear or respect) can travel to
the Southeast, it could travel to the Northeast. If, as we have
argued, the rise of new levels of complexity entails solving
problems of organization, even the spread of information
about the existence of more complex polities might supply suf-
ficient information to help solve the organizational problem.

Second, recent research on the origin of the League of the
Iroquois strongly supports the conclusion that the league orig-
inated in the thirteenth century. Indeed, according to Barbara
Mann and Jerry Fields, it was formed on August 31, 1142.[47]
While this by no means clinches Cahokian influence, it makes
it somewhat more plausible in that this is not too distant in
time from the peak of Cahokia's influence.

Much more research is needed to settle this controversy about
the role, if any, of Cahokia in the formation of the League of the
Iroquois. Still, these two pieces of information suggest that the
issue does warrant further research. Whatever the result, it will
contribute to our understanding of the workings and limits of
precontact world-systemic relations in North America.

A dispute between Pauketat and Emerson and Peregrine
and O'Brien parallels that between Peregrine and Kowalewski.
Pauketat and Emerson argue that the projection of power and
the use of ideology were the key factors in the Cahokian "sys-
tem." As we have seen, Peregrine and O'Brien emphasize the
roles of trade and economic exchange in the organization,
spread, and influence of Cahokia and Mississippian culture.
Anderson's accounts point to a way to reconcile these disputes.
Pauketat and Emerson emphasize networks and connections
along what we have called the prestige goods network, and
especially along the information network in the form of ideo-

logical and religious influence. Peregrine and O'Brien empha-
size the bulk goods network and especially the prestige goods
network and the exchange of prestige goods.[48]

The two approaches can be melded by considering
Pauketat and Emerson's contributions as a nuanced disentan-
gling of closely intertwined prestige and informational net-
works. The two networks approximate each other but are not
identical. Here Kowalewski's point, cited above, that parties to
an exchange need not impute the same symbolic meaning to
exotics goods, only that it is valuable, is most germane. To have
the same meaning requires backing with power. That power
could take many forms. It could be military force, it could be
economic superiority in the form of possessing other highly
valued goods, it could be sacred power in the form of per-
ceived closeness or access to spiritual power, or it could be
organizational power in the form of a means of generating
cooperation and avoiding 'conflict among groups of peoples.
Respect, or even awe, might have inspired the formation of the
League of the Iroquois. If, indeed, Cahokia played a role in the
formation of the League of Haudenosaunee, it would most
probably have been expressed as a religious or sacred directive
received through the usual channels, for instance, a vision. If
such a vision were further backed by a well-timed eclipse, it
would have been even more powerful.[49]

It is pointless to argue a case about which we possess so lit-
tle evidence. Rather, in this discussion we seek to indicate how
seemingly opposing interpretations might be reconciled
through a world-systems perspective. Further, we want to sug-
gest ways in which the controversies might contribute to fur-
ther development of that perspective. If the above scenario
were valid, it would suggest that for kin-based world-systems
the information net may be as, or more, important than the
prestige goods net. If so, this would mark a fairly sharp dis-
tinction between kin-based and tributary world-systems.

THE EAST

Another issue that arises once populations have become more
sedentary is the question of down-the-line trade versus long-
distance trade journeys. Michael Stewart contends that both
kinds of trade were important in the development of societies
in the Mid-Atlantic region of the East:

> Two major types or systems of coexisting
> exchange—broad-based networks and focused
> networks—can be identified in the Middle
> Atlantic region and are evident from Late
> Archaic through Late Woodland times (Stewart
> 1989). Broad-based networks are characterized
> by hand-to-hand, down-the-line exchange and
> web-like relationships common throughout the
> region. Predominantly ... ornaments are circulat-
> ed through a series of web-like or chain-like per-
> sonalized relationships....
>
> Focused exchange networks are typified by
> transactions commonly involving goods from
> areas outside of the Middle Atlantic region and
> some sources located within the region.... The
> movement of these items seems to involve rela-
> tively few contacts ... more probable is that indi-
> viduals, small groups, or entrepreneurs from the
> Middle Atlantic traveled outside of the region on
> sporadic trading missions, insinuating them-
> selves into the broad-based networks of other
> areas to obtain the goods they eventually trans-
> ported back to their homeland.[50]

This suggestion of the existence of long-distance trade treks is
an interesting hypothesis that needs to be kept in mind. In most
regions it is assumed that most trade was down-the-line, but
even a small number of occasional long-distance treks could
have been important for carrying ideas from one region to
another.

Stewart's study of trade patterns in the Middle Atlantic
results in a number of findings that are relevant for world-sys-
tems research. We have already mentioned the case of the
Delmarva Adena, in which an isolated complex society based
on the importation of burial rituals and goods from the distant
Ohio Valley Adena heartland emerged within a regional con-
text of small-scale and egalitarian societies. After the decline of
the Adena interaction sphere, neither the Hopewell nor the
Mississippian developments had cultural effects on the
Northeast or the Mid-Atlantic regions, while the Mississippian
style was adopted by emerging chiefdoms in the Southeast.
This lack of cultural adoption corresponded with a decrease in
trade between these regions.

Stewart reports a decline in trade volume, but not in extent, during the Early Woodland period from 1000 B.C.E. to 600 B.C.E., and then a trade expansion from 600/500 to 400 B.C.E. This was followed by a trade contraction from 400 B.C.E. to 200 C.E. and then another expansion from 200 to 800 C.E. In this last expansion there was no sign of cultural influence from the Hopewell heartland despite expanded trade. This was followed by a severe disruption of trade networks during the Late Woodland from 900 C.E. on. This was the period of the rise of the Mississippian interaction sphere in the Midwest, and yet neither trade nor cultural influence linked this distant florescence with the Mid-Atlantic region. Stewart portrays a kind of insularity in which the ethnohistorically known chiefdoms of the Chesapeake traded little but extracted tribute from weaker adjacent neighbors.[51]

Helen Rountree agrees that the Powhatan paramount chiefdom was not much influenced by Mississippian developments, but she argues that trade with the inland regions was an important aspect of Late Woodland power relations in the Middle Atlantic region.[52] Stewart may be right that long-distance trade was less intense than it had been in earlier periods. This kind of delinking and inward-oriented development also occurred on the Great Plains.

THE PLAINS

The Plains Indians are best known in the ethnographic literature for large bands of horsemen who hunted buffalo and made war. But horses were introduced by the Europeans and rapidly adopted by groups on the Plains. The coming of the horse had a revolutionary effect on the societies of the Plains because of increased mobility and increased efficiency of the hunt. Groups that formerly needed to disperse to find food could now come together to form larger polities and alliances. These developments had important effects on adjacent regions where peoples both adopted Plains features and organized to defend against the military power of the Plains peoples.[53]

But an earlier story is less well known. Contemporaneous with the emergence of the Mississippian interaction sphere was the florescence on the southern Plains of a mound-building culture that had important trade and cultural links with both the Mississippian heartland, especially Spiro, and with the

Southwest.[54] This is known as Caddoan culture. The Caddoans built large mounds and villages and planted corn but were culturally somewhat different from similarly complex societies to the east and west. This cultural distinction might be interpreted as only marginal differentiation if we did not also know that the Caddoans cut themselves off from trading beyond the Plains and constructed a network centered on the Caddoan heartland. This was an instance of a semiperipheral region turning itself into a core by means of delinking from other distant cores. Around 1200 C.E. Caddoan trade with the Mississippian societies stopped. This caused societies on the eastern Plains (on the border between the Plains and the Mississippian interaction sphere) to decrease in complexity. It also created a Plains trade network centered in the Caddoan heartland that was largely separated from both the Southwest and the Mississippian networks. Later the Caddoan core declined at about the same time as the Cahokian core. These declines are unlikely to have caused one another because the trade links between the regions had been severed much earlier.[55]

THE SOUTHWEST

Kowalewski's discussion of the Southwest as a culture area, while generally accurate, is far from complete. The situation is much more complicated than he portrays.[56] There are two dimensions to this. First, locally the interactions among sedentary and nomadic peoples are more complex than he portrays them. Second, the evolution of intergroup relations (sedentary-sedentary, sedentary-nomadic, nomadic-nomadic) and changes in levels of complexity and stratification within each "society" are, as he observes, conditioned by larger macroregional processes. The difficulty is, which larger macroregional processes? Those occurring in the greater Southwest, or those between the Southwest and Mesoamerica? Or both? We argue that it is both, but in somewhat different ways.

Within the Greater Southwest

Most of the research on the Southwest that explicitly uses world-systems concepts has focused on more proximate relations among societies within the Southwest. For those not familiar with Southwest prehistory and early Spanish colonial history, it is useful to note that *pueblo* (Spanish for "village" or

"town") is the generic term Spaniards applied to sedentary agriculturists found in what is now New Mexico and Arizona. Taos is a widely familiar example. These groups have only a few traits in common: They built adobe villages with a central plaza; most had kivas (underground ceremonial centers); and they grew corn, beans, and squash. Hence they appeared to be "people of reason" to Spaniards. There apparently was occasionally war and no overarching unity among different pueblo villages. The people who occupied these villages spoke languages from at least three different major linguistic stocks, and within at least one of these stocks several mutually unintelligible different languages. The literature on these peoples is further complicated by the maddening tendency to use the term *pueblo* to refer to them collectively, to refer to individual villages, and to refer to individual humans. For purposes of this paper *pueblo* is best glossed as an "autonomous, horticultural village."[57]

1. Sedentary - Sedentary Relations

There has been considerable debate about the nature of sedentary societies in the Southwest.[58] That many societies were, from time to time, quite hierarchical is now generally accepted.[59] Spielmann and Kintigh both argue for what Gregory Johnson calls sequential versus simultaneous hierarchy.[60] Simultaneous hierarchy is the familiar pyramidal structure, while sequential hierarchy is one in which decisions at each level of the hierarchy are made by consensus, more or less in an egalitarian fashion, then move up the hierarchy. This, it strikes us, is precisely the type of structure and mechanism we would expect to find when core-periphery relations are becoming more hierarchical, but have not fully supplanted kin-ordered structures with tributary structures.

Kintigh notes that throughout the non-Hohokam Southwest (approximately north of Phoenix) at the turn of the thirteenth century, the aggregation of living units into large communities and/or abandonment of smaller ones was marked. This suggests that, indeed, there was a further move toward hierarchical systems. As Kintigh argues, this second wave of aggregation, which followed the collapse of the earlier Chacoan system,[61] also collapsed. All this is reminiscent of the cycling, or rise and demise of political centralization that

Anderson describes for the Southeast. To sort all this out, the dating of the various aggregations and abandonments needs to be more precisely correlated, as Anderson has done for the Southeast. The data exist, but no one as yet has undertaken this monumental task. These relations were probably also shaped to some extent by relations with nomadic peoples.

2. Sedentary - Nomad Relations

Kowalewski's comparison of the Southwest with other U.S. culture areas describes a radical core-periphery identity separation that emerged between Pueblo horticulturists and more nomadic foragers and raiders that lived around them. The Pueblo peoples live in defensible towns, often atop mesas, where they were able to protect their stores of corn from nomadic raiders.

In their explicitly world-systemic comparison of Mesoamerica and the Southwest (which ignores the problem of the interaction between these two macroregions), Gary Feinman, Linda Nicholas, and Steadman Upham characterize the Southwest as a region in which networks were open and permeable, without strong boundaries between societies.[62] The contrast with Kowalewski's portrayal is vivid. Perhaps the earlier system was open, while the bounded Pueblo communities emerged after the Spanish invasion, but the existence of Anasazi cliff dwellings looks functionally quite similar to the mesa communities of Pueblos. It is a lot of trouble to build houses into a cliff and carry water up from below. Defense against raiders would be a likely explanation. Defensive communities and conflictive relations are often associated with strong cultural boundaries between the conflicting groups.

It is also possible that Feinman and Upham's characterization, and its contrast with Kowalewski's, is due to the different temporal scopes that these authors employ. Kowalewski is mainly talking about differences between culture areas (Northwest, Southwest, and Southeast) that existed during the late prehistoric period—the last five hundred years before the arrival of the Euro-Americans. Feinman and Upham, on the other hand, are discussing changes in the Southwest that occurred over several millennia. From the perspective of the longer temporal period, which includes major changes in the nature of cultures as well as the rise and fall of several different

cultures in different locations, boundaries are more likely to look changeable.

Katherine Spielmann's discussion of Plains-Pueblo interactions delineates two ways in which exchange between what had heretofore been relatively autonomous groups could develop into systemic exchange (core-periphery differentiation, in our terms).[63] The first, which she favors, is mutualism, in which sedentary horticulturists engage in systematic exchange with nomadic hunters in such a way that the total caloric intake over the necessary variety of food types occurs to the mutual benefit of both groups (or sets of groups). The second, favored by Wilcox and Baugh, is buffering, in which sedentary agriculturists use exchange with nomadic hunters to buffer volatile production results in marginal horticultural lands. The latter form readily lends itself to uneven exchange and development of core-periphery hierarchies (what Baugh calls a "macroeconomy").[64]

This debate over Plains-Pueblo relations raises both the issues of the transformation of core-periphery differentiation into core-periphery hierarchy and the role of internal stratification. What makes this particular case interesting—if simultaneously frustrating—is that it is not clear whether there is core-periphery hierarchy or not (differentiation is clear). Spanish intrusion into the region disrupted all these relations. As we already noted, the anthropological literature contains considerable debate over the existence and degree of social differentiation within and between Pueblo villages.[65]

The broader relevance here is that variations in the types and timing of food production among groups may foster or obviate exchange. Furthermore, the particulars of the exchange may favor equal (mutual) exchange, or unequal exchange. This suggests, among other things, multiple potential paths to development of core-periphery hierarchies within kin-based modes of production.

The issue of pacific versus conflictive relations between farmers and foragers has been raised in many other contexts. Gregg's discussion of the expansion of farming into Europe portrays a symbiotic relationship between farmers and foragers who exchanged complementary goods. Spielmann's rendering of this relationship in the Southwest also favors a symbiotic interpretation in which complementary surpluses were exchanged between Pueblos and nomadic foragers, buffering both groups against occasional shortages. Baugh uses world-

systems concepts to analyze this same relationship. Both he and Wilcox see elements of a core-periphery hierarchy in which the sedentary groups (Pueblos) were benefiting more than the nomadic foragers from the interaction. Lawrence Keeley notes that raiding and trading were often alternative means to the same end. Hall echoes this finding.[66]

One hypothesis about the variations between pacific and conflictive relations stemming from our interaction model of world-system evolution is that the level of conflict among societies in all systems will go through cycles of increase and decrease.[67] Farmer/forager interactions are more symbiotic under conditions of low population pressure, but when ecological degradation or population growth raises the costs of production, conflict among societies is likely to increase. It is during these periods that new institutional solutions are more likely to be invented and implemented. But if new hierarchies or new technologies are not employed, conflict itself will reduce the population and a period of relative peace will return.

Randall McGuire's study of core-periphery relations in the Hohokam interaction sphere reveals evidence of the rise of a culturally innovative center near what is now Phoenix, Arizona. Several different surrounding peripheral regions adopted styles from the core. McGuire demonstrates the dangers of applying assumptions based on the modern world-system to stateless systems. He finds that the peripheral Hohokam regions do not culturally converge, but rather they become more distinct from one another as the climate changes and as they interact with other distant core regions. Of course the hypothesis of convergence among peripheral regions is also contradicted for the modern world-system since peripheral areas often experience quite different developmental paths. But in both the Hohokam and the modern world-system the idea of a core-periphery structure nevertheless proves useful for understanding social change.[68]

3. Nomad - Nomad Relations

Little is known archeologically about nomad-nomad relations. Some of the nomadic groups may have been recent arrivals in the Southwest. Following the suggestions of Baugh and Wilcox, trade among nomadic foragers may well have been an alternative to centralization in stabilizing volatile food supplies.[69]

Unfortunately, the arrival of Spaniards from the 1530s on vast-
ly disrupted intergroup relations. The alliances that some of the
nomadic groups—the Comanches, for instance—made with
the Spanish may have had prehistoric analogues in which
nomadic groups allied with particular Pueblo core societies to
provide protection against other nomadic groups, and possibly
to serve as allies in disputes among Pueblo societies.[70]

RELATIONS BETWEEN THE GREATER SOUTHWEST
AND MESOAMERICA

The nested network approach described above is helpful for
understanding the ways in which precontact North American
societies were linked to one another and the relevance of these
links for processes of development. As with state-based sys-
tems, bulk goods, political/military interactions, prestige
goods networks, and information networks formed a set of
nested nets of increasing spatial scale. A huge controversy has
arisen about the importance or unimportance of links between
the U.S. Southwest and Mesoamerica. Some archeologists
argued early on that the Southwest constituted a periphery of
the Mesoamerican world-system.[71] But now connections
between the Greater Southwest and Mesoamerica are widely
accepted; however, their importance to local development is
still the subject of considerable dispute. Some of this dispute
derives from too strict an application of Wallersteinian world-
systems theory, which is alleged to suggest underdevelopmen-
tal, or backwash, effects in the Southwest.[72] We argue that when
kin-ordered groups are incorporated into a state-based tribu-
tary world-system, even inchoate, pristine ones, we expect
spread or developmental effects. This, too, in different lan-
guage, is now more widely accepted. Here, however, debate
centers on whether these effects were necessary or only ancil-
lary. The aggregation of living units that followed on the heels
of the Chacoan collapse would seem to suggest that the effects
of the Mesoamerican connection were more than ancillary.
Whether they were determinitive, however, remains unclear. It
is possible that the post-Chacoan aggregation was a response to
climatic change.

　　Weigand and Harbottle continue to argue that the
Southwest was a periphery of Mesoamerica based on the fact
that turquoise from the Southwest was mined and exported to

the states in the Mesoamerican highlands. They claim that turquoise played an important role in the overall structure of trade between these two regions and that the demand for turquoise was an important factor in the rise of complex societies in the Southwest. Other features of societies in the Southwest, such as ball-courts, ceremonial mounds, and parrots kept as pets also suggest important interactions with Mesoamerica.[73]

Late Mississippian chiefdoms such as that at Etowah in Georgia have been found to have produced iconographs that employ design elements and symbolic content which is strikingly similar to the icons of Mesoamerican states. Anderson reproduces an iconograph as an example of what archeologists have come to refer to as the Southern Cult.[74] Most archeologists contend that influences from Mesoamerica were unimportant to the processes of development that occurred in the Southwest and other areas of what is now the United States. Some argue that these cultural resemblances are due to parallel evolution, not interaction.[75]

The evidence of turquoise sourcing shows that trade definitely took place between highland Mesoamerica and the Southwest. Certainly there was down-the-line trade, but there could have also been at least a few long-distance trade expeditions undertaken by *pochteca*[76] from the Mexican highlands. It is hard to imagine how down-the-line trade could have transmitted the ideologies behind the iconographs of the Southern Cult. But were these connections systemic in the sense that they were important for social reproduction or social change? Some archeologists think the Mexican ideology was adopted by declining Mississippian chiefdoms as part of an effort to revitalize hierarchies that were caught in a downward spiral. The predominant opinion among archeologists after two decades of dispute is that local and regional processes were much more important determinants of development in the Southwest and the Southeast than the long-distance connections with Mesoamerica.

THE GREAT BASIN

In what are now the states of Utah, Nevada, and eastern California is a region of high desert in which water does not flow to the seas but rather into large basins. Some rather large

rivers run for hundreds of miles and disappear into the sand. It is an ecologically sparse environment that is punctuated by small areas where water, game, and plant life are more abundant. In addition to the lack of rainfall in most areas, the distribution of rainfall varies greatly from year to year. This ecologically coarse environment was the home of nomadic foragers, known ethnohistorically as the Paiute, the Western Shoshone, and the Ute, who adapted to the desert environment by moving to where food was most available. This region also inspired the theory of evolution known as cultural ecology or human ecology which emphasizes the importance of adaptations to the local environment. Julian Steward did important ethnographic surveys in which he charted population densities across the entire Great Basin region and analyzed the important organizational and cultural differences among the ethnohistorically known groups in this large region.[77]

As the debate about the Southwest's being a periphery to Mesoamerica has raged, an analogous controversy has arisen over whether or not the Great Basin was a periphery to the Southwest. The early peoples who moved to the Great Basin probably occupied the few locations where supplies of game and food plants were the greatest. Subsequent population growth led groups to occupy more marginal regions. What emerged was a mosaic of social structures that mapped the ecological structure almost perfectly. This desert mosaic was impinged upon by influences from California, the Plains, and the Southwest, but despite these factors and changes in climate, the basic structure still existed when the Euro-Americans finally settled this region after 1850.

Southwestern-type horticulturists and pot-makers, called the Fremont culture, moved into the southern Great Basin in about 400 C.E. Between 1250 and 1350 C.E. the Fremont peoples had abandoned the Great Basin, probably because of the droughts of the Little Ice Age. It was this same climatic change that probably caused the abandonment of the Anasazi regions on the Colorado plateau to the south. New groups of people, probably the ancestors of the Shoshone, moved into the region at this time. This was an instance of rise and fall which was accompanied by population movements and probably caused by climatic changes that greatly affected the viability of horticulture in this region. The desert mosaic of small settled groups near isolated food resources surrounded by more nomadic groups following the yearly variation in food availability

returned after the withdrawal of the Pueblo-type horticulturists.

Steward's analysis shows that the local core groups developed religious rituals, collective property rights, and political organization at the village level, whereas their more nomadic neighbors existed primarily with only family-level organization. Steward does not discuss the interactions among these groups. Indeed, he claims that there was little trade and little interaction. But the groups occupying prime sites needed to protect their resources from intruders. They developed political organization to regulate internal access, but also to protect from external appropriation. Steward points out that warfare was not an important emphasis for any of these groups, except those few who adopted some of the cultural trappings from neighboring societies on the Great Plains. Nevertheless, the development of bounded territories and the enforcement of legitimate claims to resources by means of coercion—even if only yelling and stone-throwing—represented an institutional response to a core-periphery differentiation in which some groups need to protect their resources from other groups.

As for the peripheral peoples, their culture, as Steward says, was primarily "gastric." To prevent starvation, they needed to cache enough food to last until spring. The key food for this purpose was piñon nuts, which were available for harvest in the fall. Piñon nut crops varied greatly from location to location from year to year, and when they were plentiful in one location there was usually enough for all who had the ability to harvest and process them. This set of characteristics was not propitious for the development of property rights, and so groups did not try to control particular piñon stands.

What we have here is a rather elemental form of a local core-periphery structure. There was no core-periphery hierarchy in which core societies exploited the labor or resources of peripheral societies. What the core societies did was to protect their assets from potential peripheral intruders. And for their part the peripheral peoples were disorganized by the ecological circumstances which dictated that they remain spread out in very small groups for "optimal foraging." Thus, when hunger gripped them, they did not have the ability to attack the stores of the core societies. Rather, they simply starved.

Contrary to Steward's claim that Great Basin peoples did not trade, ample archeological evidence exists demonstrating that they did participate in long-distance trade networks. Bennyhoff and Hughes show that a trade network linking the

Western Great Basin to the coast of Northern California
expanded from 2000 B.C.E. to 200 B.C.E. and then contracted
from 200 B.C.E. to 700 C.E. and then expanded again from 700
C.E. to 1500 C.E. After 1500 C.E. a major expansion took place
within California based on a different kind of shell (clam disk
beads), but this network did not extend to the Great Basin.
Hughes shows that two caves that are rather close to one
another in the Western Great Basin were parts of very different
obsidian exchange networks, but were linked to the same shell
network. This cautions us against assuming that all sorts of
trade items fit into exchange networks that have the same spa-
tial characteristics.[78]

THE NORTHWEST

In the Pacific Northwest rather complex and hierarchical poli-
ties emerged in the absence of horticulture. These maritime
societies were able to sustain large and concentrated popula-
tions due to the abundance of fish and sea mammals on the
coast and in the rivers. The popular symbol of these quintes-
sential big man societies is the totem pole, a symbolic repre-
sentation of ranked clans.[79] These societies are also famous for
the potlatch, an institution in which big men obtained prestige
and influence by giving away or destroying great quantities of
wealth. The Tlingit, the Haida, and the Kwatkiutl groups con-
tained many independent big man polities. They warred with-
in, as well as between, these linguistic groups. And they trad-
ed with inland peoples for important food and raw materials,
including copper and slaves.

Kowalewski characterizes the Northwest in terms of a core-
periphery hierarchy in which coastal societies imported slaves
from inland societies. A great exchange network linked the
societies on the coast to the whole region of the Columbia River
plateau. The vast availability of food on the coast created a
demand for extra labor for the processing of fish and sea mam-
mals. Both prestige goods and slaves moved long distances,
primarily by down-the-line trade. Studies of documents from
the early historical period show that in coastal societies slaves
constituted between 5 and 25 percent of the population;[80] thus,
slavery was a significant component of the economies of these
societies. Though the core societies were themselves not very
stratified, nor very large, this indicates the existence of an

important degree of core-periphery hierarchy in which the peripheral societies were greatly affected.

The existence of a huge comparative advantage in the production of food enabled the coastal Athabascans to buy copper from inland groups, and to buy slaves. This latter "demand" encouraged groups of foragers far from the coast to begin systematically to raid their neighbors for captives and to sell these to other neighbors. This led to a generalized increase in the conflict among these societies and increased specialization in organized coercion. It also stimulated the production of other goods for use in the larger trade network. Copper and dentalia, a toothlike marine shell, were used as media of exchange in this large down-the-line trading system. Ironically, the availability of imported slaves allowed the big man systems to substitute an imported group of workers for a domestic class of workers. This allowed for class exploitation without the emergence of a radical class distinction between chiefs and commoners. The slaves and their children often became integrated into the local kinship system by marriage and adoption.

So this was a very different kind of slave system than those that developed in more stratified societies. This system has great comparative significance. It shows that core-periphery hierarchy can exist despite a low degree of stratification within the core societies. It also shows that a coercive system can operate despite the absence of any direct coercion exerted by core societies if these have a resource that is in great demand. In this situation peripheral societies will exercise coercion on one another in order to obtain valuables from the core.

CALIFORNIA

In California there were no totem poles. A few societies had clans and moieties, but hierarchical kinship systems did not exist. In the area of Northern California that we have studied the largest polity was the tribelet, a very small unit consisting of a few villages.[81] Larger political entities did not exist except in the San Joaquin Valley (Yokuts) and in Santa Barbara (Chumash). Though California has been characterized as a culture area based on similarities in social structure and artifacts, there were enormous differences within California as well, linguistic differences being the most obvious. Linguists contend that six major linguistic stocks were present in indigenous California.

We have already mentioned the studies of trade linkages between California and the Great Basin. These show that pulsation of trade networks is a feature of intersocietal relations even when the constituent societies are egalitarian. What we do not know is whether or not the trade pulsations corresponded to changes in the rate of population growth or other elements of complexity in the linked societies.

Northern California provides an interesting example of a border region between two large trade networks. Our study of the Wintu, who lived at the northern end of the Sacramento valley and in some of the surrounding hills and mountains, reveals a region of overlap between the Pacific Northwestern network and the network that originated in central California. The trade of dentalia shells from the Pacific Northwest had only recently extended to the Wintu. Archeological sites reveal very small numbers of these shells, and these in only very recent contexts. The Wintu were just beyond the boundary of the slave raiding and trading network. The Modoc Indians in the very northernmost corner of California were raiders who took captives to sell to groups to the north. The Modoc raided the Shasta and the Achomawi, but these latter linguistic groups had not yet become participants in this down-the-line mode of core-periphery relations. So the Wintu and all of California to the south enjoyed a less coercive relationship with their neighbors.

SUMMARY, DISCUSSION, AND CONCLUSIONS

By way of summary we have constructed figure 2, which is loosely based on our review of the archeological evidence about trade and rise and fall. It shows that trade networks and levels of complexity rose and fell in each of the regions that we considered, and that these regions were sometimes linked and then delinked with one another. We have used artistic license rather than firm data to construct figure 2 in the hope of stimulating further research that can more exactly examine these cycles. It also would be interesting to include Mesoamerica in a portrayal such as that in figure 2. If there turn out to be synchronicities, this does not in itself tell us about causality, but, as with the Eurasian case mentioned above, it stimulates research into causality.

This overview of the North American world-systems suggests some new hypotheses about core-periphery hierarchies in
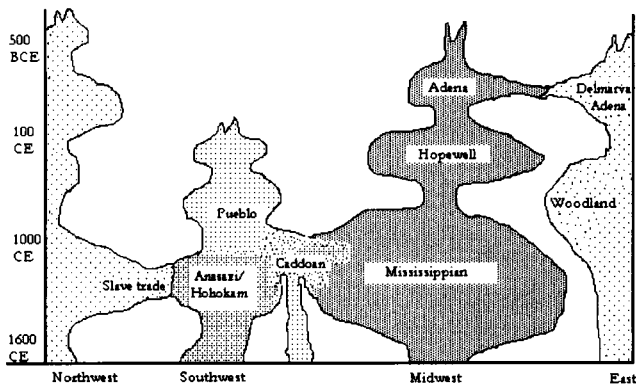
Figure 2: Trade network pulsations in Pre-Columbian North America

stateless world-systems. The case of the Pacific Northwest indicates that a true core-periphery hierarchy can exist in which the core region is extracting valuable resources from a peripheral region despite the absence of much in the way of hierarchy within the core societies and little direct coercion exercised by the core societies over the peripheries. This circumstance can emerge when the core region has a large comparative advantage in the production of some resource that is highly valued throughout the system. In this case the valuable resource was food. Such a comparative advantage can be used to develop other advantages, such as the ability to import copper and then to export it. The peripheral societies are induced to participate in the core-periphery relationship in order to gain greater access to imported goods, and they utilize coercion on their neighbors to obtain these goods. Such an instance indicates that our hypothesis that stable core-periphery hierarchies only emerge in state-based systems needs to be confronted by careful studies of stateless systems so that we can understand the conditions under which inequalities among societies can be institutionalized.

What seems to happen in the watershed between kin-ordered and tributary systems during the emergence of states is that kin-ordered chiefdoms get more complex and then collapse back to simpler forms. As Anderson argues, they do this for a millennium or more before they make another breakthrough to form a pristine state. Cahokia appears to have been one such breakthrough that lasted for a few centuries. Chaco Canyon in the Southwest may have been another, or more like-

ly one that almost made it and then collapsed.[82]

In both cases, the rise and fall seems to be the result of inter-
action of population expansion, territorial expansion, produc-
tive technology, and climatic cycles of various durations.
Anderson shows quite convincingly that in a productive sys-
tem which can store only one or two years' worth of supplies,
collapse due to food shortages will occur irregularly. In lusher
times, populations expand and settlements hive off and occupy
new territories. When times become lean, some of the more
recently occupied regions must be abandoned or at least are
severely depopulated. If this cycle is sufficiently regular people
will try to develop mechanisms for meeting this stress. When
the mechanism works, population will expand again until new
limits are reached.[83]

One of the major solutions to such environmental variation
is increasing complexity.[84] This new complexity, which we see
as expanding world-systems both in the sense of territorial
expansion and in the sense of increasing hierarchy, exploita-
tion, and systemness, is also subject to cycles, what we call rise
and demise, and what for chiefdoms Anderson calls "cycling."
Here, again, environmental fluctuations can be one root cause:
A shortage of food undermines the creditability of an elite and
its costs, often leading to collapse and a loss of complexity. As
Tainter notes, collapse is often beneficial to the masses who
underwrote the complexity, though at the same time it is disas-
trous for elites. A new wrinkle here is that social organization
itself may introduce instability, such as when the succession of
leaders is not clearly institutionalized. Thus the death of a
leader (a chief in North America, kings in many places) can
lead to collapse, or present an opportunity for a robust semi-
peripheral region to seize an opportunity to become the core of
a system.[85]

There is an important, but abstract and janus-faced, point to
emphasize here. On the one hand, what disrupts the system is
not important in and of itself, only that there is a disruption. If
any one of the key variables shaping the system fluctuates reg-
ularly, or even irregularly, disruptions are highly likely. On the
other hand, depending on the type of system and the specifics
of its organization, some types of disruption may be more like-
ly than others. The specific type of disruption shapes the tim-
ing, extent, and process of collapse and expansion, and so can
be theorized generally in only the most abstract terms. This is
why the same disruption can have opposite effects in different

systems, and very different disruptions can have the same effect, either in one system or in different systems.

We illustrate this with a few examples. Increased moisture in the Southeast, where riverine agricultural land is subject to swamping, making agriculture impossible, can be disastrous. In the Southwest, where water is scarce, increased moisture may lead to the opening of new territories to agriculture and increased crop production and hence population growth and expansion. On the other hand, in the Southwest both too much or too little water can be disastrous. Too little water (drought) can lead to crop failure, and if repeated in quick succession it may exhaust stored supplies. But too much water, or too much at one time, can produce the same result, because the sudden flooding can wash away fragile topsoils and make farming impossible in a valley or region.

We are far from the first to discover this. Ancient farmers knew it everywhere and sought to control or compensate for such fluctuations by diversified cropping and food procurement, trade, storage, and other techniques. Still, if regional fluctuation is too great, the mechanisms can fail. These processes can become more extreme in marginal environments. For instance, suppose the local varieties of maize mature in seventy-five to eighty-five days. If the typical frost-free time is one hundred days, then farmers have many choices in planting to diversify to avoid crop loss. But when marginal land is occupied, say with an average of eighty-seven frost-free days, crop failure will be a common occurrence. Thus, if longer climatic cycles shift from one hundred to ninety frost-free days, land that was once easy to farm becomes marginal. This is why, other things being equal, complexity appears more quickly in marginal areas than in more robust areas.

Similarly, the most important characteristic of local weather and climate may be its volatility, that is, the extent and rapidity with which it fluctuates. In statistical terms, it is the variance of climatic variables, not their means, that is crucial. Even relatively rare variations can be disastrous if not attended to—as the people in central California learned quite painfully in the winter of 1996 to 1997. A run of dry weather can undermine even a fairly robust chiefdom, as Anderson demonstrated.[86]

Research on premodern world-system cycles has only begun. Firm conclusions are unwarranted. Based on our survey of archeological studies of trade and complexity, there is general support for the hypothesis of synchronous changes in

the political rise-and-fall cycle and economic expansion and contraction. The problem of synchronicities in sequences of rise and fall or pulsation across different culture areas needs further research. Yet gaps remain. For example, the Great Basin, especially its eastern half, has not been discussed. The interactions between different culture areas or world-systems need further study.

Here we confront the perennial problem of comparative research: When are comparisons useful and when are they misleading? The answer is not found in the comparisons themselves, but in the theoretical issues toward which they are directed.[87] Comparisons are two-way. Much might be learned about the rest of world by examining changes in light of what happened in North America. An important consequence of such strategies would be to help rectify the Eurocentric tendency in much social theory by taking a North American, indigenist perspective.

ACKNOWLEDGMENTS

NOTES

    1.   Among others, we drew on the following sources: Alvin M. Josephy, Jr., ed., *America in 1492: The World of the Indian Peoples Before the Arrival of Columbus* (New York: Knopf, 1991); Stephen Plog, *Ancient Peoples of the American Southwest* (London: Thames and Hudson, 1997); Neal Salisbury, "The Indians' Old World: Native Americans and the Coming of Europeans," *The William and Mary Quarterly*, 3rd series, 53:3 (July 1996): 435-458; Bruce G. Trigger and Wilcomb E. Washburn, eds. *The Cambridge History of the Native Peoples of the Americas, Vol. I: North America*, Parts I & II (Cambridge: Cambridge University Press, 1996).
    2.   Eric R. Wolf, *Europe and the People Without History* (Berkeley: University of California Press, 1982); R. Brian Ferguson and Neil L. Whitehead, eds., *War in the Tribal Zone: Expanding States and Indigenous Warfare* (Santa Fe, NM: School of American Research Press, 1992); Jim M. Blaut, *The Colonizer's Model of the World: Geographical Diffusionism and Eurocentric History* (New York: The Guilford Press, 1993).

3. Immanuel Wallerstein, "The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis," *Comparative Studies in Society and History* 16:4 (September 1974): 387-415; idem, *The Modern World-System: Capitalist Agriculture and the Origins of European World-Economy in the Sixteenth Century* (New York: Academic Press, 1974).

4. It is unfortunate that terminology has become so politicized. See Joane Nagel, *American Indian Ethnic Renewal: Red Power and the Resurgence of Identity and Culture* (New York: Oxford, 1996), especially her "Note on terminology," xi-xiii. Her discussions of identity politics among Native Americans ("Introduction: American Indian Ethnic Renwal," 3-16 and Chapter 1: "Constructing Ethnic Identity," 19-42) are especially insightful. Stephen Cornell, *Return of the Native: American Indian Political Resurgence* (New York: Oxford, 1988) is also insightful. Other general literature on identity politics includes: Benedict Anderson, *Imagined Communities, Reflections on the Origin and Spread of Nationalism* (London: Verso, 1991, rev. ed.); Jonathan Friedman, *Cultural Identity and Global Process* (Thousand Oaks, CA: Sage, 1994); Roland Robertson, *Globalization: Social Theory and Global Culture* (Newbury Park, CA: Sage Press, 1992); Mike Featherstone, ed., *Global Culture: Nationalism, Globalization and Modernity* (Newbury Park, CA: Sage, 1990); Mike Featherstone, Scott Lash, and Roland Robertson, eds., *Global Modernities* (Newbury Park, CA: Sage, 1995); Anthony D. King, ed., *Culture, Globalization and the World-System: Contemporary Conditions for the Representation of Identity* (Minneapolis: University of Minnesota Press, 1997).

5. Ward Churchill, *Indians Are Us: Culture and Genocide in Native North America* (Monroe, ME: Common Courage Press, 1994); idem, *From A Native Son: Selected Essays on Indigenism, 1985-1995* (Boston: South End Press, 1996); Stewart Rafert, *The Miami Indians of Indiana: A Persistent People, 1654-1994* (Indianapolis: Indiana Historical Society, 1996), 231-232; Alison R. Bernstein, *American Indians and World War II, Toward a New Era in Indian Affairs* (Norman: University of Oklahoma Press, 1991); Tom Holm, "Patriots and Pawns: State Use of American Indians in the Military and the Process of Nativization in the United States," in *The State of Native America: Genocide, Colonization, and Resistance,* ed. M. Annette Jaimes (Boston: South End Press, 1992), 345-370.

6. Several articles in a forthcoming issue of the *International Journal of Political Science* address the issues of the changing nature of ethnicity, race, and national-ism with the rise of modernity. Jonathan Friedman, "Transnationalization, Socio-Political Disorder and Ethnification as Expressions of Declining Global Hegemony"; Thomas D. Hall, "The Effects of Incorporation into World-Systems on Ethnic Processes: Lessons from the Ancient World for the Contemporary World"; Fred Riggs, "The Modernity of Ethnic Identity and Conflict"; Majid Tehrenian, "Migration, Identity, and World System Development." Also relevant is Fred Riggs, "Ethnonationalism, Industrialism, and the Modern State," *Third World Quarterly* 15:4 (1994): 583-611.

7. Stephen K. Sanderson, *Social Evolutionism: A Critical History* (London: Basil Blackwell, 1990).

8. The world-systems perspective is associated with the work of Immanuel Wallerstein; ibid., Christopher Chase-Dunn, *Global Formation: Structures of the World-Economy* (London: Blackwell, 1989) provides a useful summary of research on the modern world-system. Thomas R. Shannon, *An Introduction to the World-System Perspective*, 2nd ed. (Boulder: Westview, 1996) provides a helpful overview of the world-systems perspective as applied to the modern system. Thomas D. Hall, "The World-System Perspective: A Small Sample from a Large Universe," *Sociological Inquiry* 66:4 (1996): 440-454 gives a brief overview of world-systems research.

9. Andre Gunder Frank and Barry K. Gills, *The World System: 500 or 5000 Years?* (London: Routledge, 1993). Christopher Chase-Dunn and Thomas D. Hall, *Rise and Demise: Comparing World-Systems* (Boulder: Westview Press, 1997). Unless otherwise noted all references in this section are to *Rise and Demise*.

10. Ibid., 28, 275.

11. Down-the-line interaction means there are no long-distance travelers, and so information and goods are passed from group to group to group. For an extended discussion of down-the-line trade, see Colin Renfrew, "Trade as Action at a Distance," in *Approaches to Social Archaeology*, ed. Colin Renfrew (Edinburgh: Edinburgh University Press, 1984), 86-134.

12. Ibid., chapter 8.

13. For an extended example from Northern California, see *Rise and Demise*, chapter 7; and, especially, also see Christopher Chase-Dunn and Kelley M. Mann, *The Wintu and Their Neighbors: A Very Small World-System in Northern California* (Tucson: University of Arizona Press, 1998).

14. See *Rise and Demise*, chapters 10 and 11.

15. David G. Anderson, *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast* (Tuscaloosa, AL: University of Alabama Press, 1994). Some interesting parallel examples—though not described in world-system terms—can be found in Susan A. Gregg, ed., *Between Bands and States*, Center for Archaeological Investigations, Occasional Paper #9 (Carbondale, IL: Southern Illinois University Press, 1991).

16. For further details, see *Rise and Demise*, chapter 10 and the references cited therein. New work on this topic is being done by George Modelski, "Early World Cities: Extending the Census to the Fourth Millennium," paper presented at the annual International Studies Association, Toronto, March 1997; and George Modelski and William R. Thompson, "The Evolutionary Pulse of the World System II: Hinterland Incursions and Migration, 4000 BC to 1500 AD," paper presented at the annual International Studies Association, Toronto, March 1997.

17. See *Rise and Demise*, chapter 6, for a more detailed account.

18. See the following (and the literature cited therein): Thomas D. Hall, "Incorporation in the World-System: Toward a Critique," *American Sociological Review* 51 (June 1986): 390-401; idem, "Native Americans and Incorporation: Patterns and Problems," *American Indian Culture and Research Journal* 11:1

(1987):1-30; idem, *Social Change in the Southwest, 1350-1880* (Lawrence: University of Kansas Press, 1989); P. Nick Kardulias, "Fur Production as a Specialized Activity in a World-System: Indians in the North American Fur Trade," *American Indian Culture and Research Journal* 14:1 (1990): 25-60; Wilma A. Dunaway, *The First American Frontier: Transition to Capitalism in Southern Appalachia, 1700-1860* (Chapel-Hill: University of North Carolina Press, 1996); idem, "Incorporation as an Interactive Process: Cherokee Resistance to Expansion of the Capitalist World System, 1560-1763," *Sociological Inquiry* 64:4 (1996): 455-470. Also, chapter 4 of *Rise and Demise* reviews all this and other literature on incorporation and its relations to underdevelopment and colonialism. In that chapter we also begin to address the problem of distinguishing between mergers of approximately comparable world-systems and incorporation of one by another.

19.   Stephen A. Kowalewski, "Clout, Corn, Copper, Core-Periphery, Culture Area," in *Pre-Columbian World Systems*, ed. Peter N. Peregrine and Gary M. Feinman, Monographs in World Archaeology No. 26 (Madison, WI: Prehistory Press, 1996), 27-37.

20.   B.P. means "before present." We also use B.C.E. (before common era) and C.E. (common era) to replace the traditional B.C. and A.D.

21.   The Bering land bridge has been disputed by Vine Deloria, Jr., *Red Earth, White Lies: Native Americans and the Myth of Scientific Fact* (New York: Scribner, 1995). His objections seem to center on the political uses to which that claim has been put. We do not wish to enter that controversy—but acknowledge both its existence and importance—primarily because the date and direction of human origins in North America is not crucial to our analysis. To be sure, these issues would become important if the study of world-systems were to be pushed back further in time.

22.   The first Clovis points found near Clovis, New Mexico have been dated as 11,200 B.P.

23.   On sourcing see Richard E. Hughes, ed., *Current Directions in California Obsidian Studies*, Contributions of the University of California Archaeological Research Facility, No. 48 (Berkeley: Department of Anthropology, University of California, 1989).

24.   Elena Ermolaeva, "Chiefdom to State: Cultural Identity and Hierarchy Formation in the Ancient Hawaiian World-System," unpublished Ph.D. thesis, Department of Sociology, Johns Hopkins University, 1997.

25.   Loc. cit.

26.   If Deloria, *Red Earth,* is correct that Paleoindians came much earlier and not over the Bering land bridge, then the idea of cultural homogeneity becomes even less plausible.

27.   For views on this, see Brian M. Fagan, *Ancient North America* (London: Thames and Hudson, 1991); Helen Hornbeck Tanner, ed., *The Settling of North America: The Atlas of the Great Migrations into North America from the Ice Age to the Present* (New York: Macmillan, 1995); and Dean R. Snow, "The First Americans and the Differentiation of Hunter-Gatherer Cultures," in *The*

Cambridge History of the Native Peoples of the Americas, ed. Bruce G. Trigger and Wilcomb E. Washburn, Vol. I: *North America,* Part I (Cambridge: Cambridge University Press, 1996), 125-199.

28.   Timothy G. Baugh and Jonathan E. Ericson, eds., *Prehistoric Exchange Systems in North America* (New York: Plenum Press, 1994); and Jonathan E. Ericson and Timothy G. Baugh, eds., *The American Southwest and Mesoamerica: Systems of Prehistoric Exchange* (New York: Plenum Press, 1994). For examples, see figure 1, p. 150 in Susan C. Vehik and Timothy G. Baugh, "Prehistoric Plains Trade," in Baugh and Ericson, pp. 249-274. We note that this map does not include all known sources of traded goods.

29.   Bruce D. Smith, *Rivers of Change: Essays on Early Agriculture in Eastern North America* (Washington: Smithsonian, 1992); R. Douglas Hurt, *Indian Agriculture in America: Prehistory to the Present* (Lawrence, University Press of Kansas, 1987), 11ff.

30.   J. V. Wright, "The Prehistoric Transportation of Goods in the St. Lawrence River Basin," in Baugh and Earle, p. 55, presents a map that shows the spread of the Adena burial cult into the St. Lawrence River basin and also the routes by which copper from Lake Superior is thought to have been brought to the Adena heartland in Ohio.

31.   W. A. Ritchie and D.W. Dragoo, "The Eastern Dispersal of Adena," *American Antiquity* 25:1 (1959): 43-50.

32.   Joseph R. Caldwell, "Interaction Spheres in Prehistory," *Hopewellian Studies* 12:6 (Springfield, IL: Illinois State Museum Scientific Papers, 1964): 133-156.

33.   T. L. Ford, "Adena Sites on the Chesapeake Bay," *Archaeology of Eastern North America* 4 (1976): 63-89; Michael R. Stewart, "Late Archaic through Late Woodland Exchange in the Middle Atlantic Region," in Baugh and Ericson, 73-98.

34.   David S. Brose, "Trade and Exchange in the Midwestern United States," in Baugh and Ericson, 215-240.

35.   Robert J. Jeske, "World Systems Theory, Core Periphery Interactions and Elite Economic Exchange in Mississippian Societies," *Journal of World-Systems Research* 2:10 (http://csf.colorado.edu/wsystems/jwsr).

36.   Peter N. Peregrine, *Mississippian Evolution: A World-System Perspective,* Monographs in World Archaeology No. 9 (Madison, WI: Prehistory Press, 1992); idem, "Networks of Power: The Mississippian World-System," in *Native American Interactions,* ed. M. Nassaney and K. Sassaman (Knoxville, TN: University of Tennessee Press, 1995), 132-143; idem, "Hyperopia or Hyperbole?: The Mississippian World-System" in *Pre-Columbian World Systems,* 39-50. While disagreeing about many other things, Timothy R. Pauketat and Neal H. Lopinot, "Cahokian Population Dynamics," in *Cahokia: Domination and Ideology in the Mississippian World,* ed., Timothy R. Pauketat and Thomas E. Emerson (Lincoln, University of Nebraska Press, 1997) concur in these population estimates.

37.   Allen W. Johnson and Timothy K. Earle, *The Evolution of Human Societies: From Foraging Group to Agrarian State* (Stanford, Stanford University Press, 1987).

38.   Patricia O'Brien, "'The World-System' of Cahokia within the Middle Mississippian Tradition," *Review* 15:3 (Summer 1992): 389-418. In more than one conversation O'Brien has protested that there is a bias among archeologists to the effect that there were no indigenous states in North America. Timothy R. Pauketat and Thomas R. Emerson, *Cahokia*, argue explicitly against both O'Brien and Peregrine, op.cit., that Cahokia was only a large chiefdom. The existence of a rather large retainer burial is potent evidence for a state. But the lack of repetition and the absence of other indicators of a state argue against that conclusion. A reasonable working hypothesis would be that Cahokia was one of those rare occurrences that straddle conceptually neat divisions.

39.   David G. Anderson, "The Role of Cahokia in the Evolution of Southeastern Mississippian Society," in *Cahokia*, 251; see also idem, *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast* (Tuscaloosa, AL: University of Alabama Press, 1994).

40.   Peregrine, *Mississippian Evolution* (quote from p. 41); Kowalewski, "Corn."

41.   Kowalewski, "Corn," 30-31; on value of knowledge and distant goods, see Mary W. Helms, *Ancient Panama: Chiefs in Search of Power* (Austin: University of Texas Press, 1979) and idem, *Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge, and Geographical Distance* (Princeton, Princeton University Press, 1988). Kowalewski cites the former.

42.   Jonathan Friedman, "Catastrophe and Continuity in Social Evolution," in *Theory and Explanation in Archaeology: The Southhampton Conference*, ed. Colin Renfrew, Michael J. Rowlands, and Barbara Abbott Segraves (New York: Academic Press, 1982), 175-196.

43.   This is essentially what Pauketat and Emerson argue in Cahokia.

44.   Dena F. Dincauze and Robert J. Hasenstab, "Explaining the Iroquois: Tribalization on a Prehistoric Periphery," in *Centre and Periphery: Comparative Studies in Archaeology*, ed. Timothy C. Champion (London: Unwin Hyman, 1989), 67-87.

45.   Peregrine, "Hyperopia," 41-43.

46.   David G. Anderson, "The Role of Cahokia," 262; and *The Savannah River Chiefdoms*.

47.   Barbara A. Mann and Jerry L. Fields, "A Sign in the Sky: Dating the League of the Haudenosaunee," *American Indian Culture and Research Journal* 21:2 (1997):105-163.

48.   Pauketat and Emerson, *Cahokia*; O'Brien, "'The World-System'"; Peregrine, *Mississippian Evolution*; idem, "Networks"; idem, "Hyperopia."

49.   The argument we are making would constitute a fifth indicator supporting the analyses of Mann and Fields, "A Sign."

50.   Michael R. Stewart, " Late Archaic," 75-80; internal reference, idem, "Trade and Exchange in Middle Atlantic Region Prehistory," *Archaeology of Eastern North America* 17 (1989): 47-48.

51.   Stewart, "Late Archaic," 82-85; Peter H. Wood, Gregory A. Waselkov, and M. Thomas Hartley, eds., *Powhatan's Mantle, Indians in the Colonial Southeast* (Lincoln: University of Nebraska Press, 1989).

52. Helen C. Rountree, "Summary and Implications," in *Powhatan Foreign Relations, 1500-1722,* ed. Helen C. Rountree (Charolottesville, VA: University of Virginia Press, 1993), 207-228.

53. On the Plains and horses, the classic discussion is by Frank R. Secoy, *Changing Military Patterns of the Great Plains Indians (Seventeenth Century Through Early Nineteenth Century),* Monographs of the American Ethnological Society, No. 21 (Locust Valley, NY: J.J. Augustin, 1953, reprinted Lincoln: University of Nebraska Press, 1992); as are Robert H. Lowie, *Indians of the Plains* (Garden City, NY: Natural History Press, 1954) and Frank G. Roe, *The Indian and the Horse* (Norman: University of Oklahoma Press, 1954). Further discussion, from a world-system perspective, can be found in Hall, *Social Change;* and idem, "Frontiers and Incorporation into the Modern World-System: Northern New Spain and Southwestern United States, 1598-1880," in *Geographic Perspectives on Social Change,* ed. Carville Earle and Leonard Hochberg (Stanford: Stanford University Press, forthcoming).

54. Vehik and Baugh, op.cit.

55. Obviously, this all too brief sketch ignores the peoples who became the Mandan, the Lakota, and so forth. We simply know too little to do so with any confidence. This is yet another case in which other scholars could make considerable contribution to our understanding of precolonial world-systems by reexamining such relations.

56. Timothy G. Baugh, "Southern Plains Societies and Eastern Frontier Pueblo Exchange during the Protohistoric Period," in *Papers of the Archaeological Society of New Mexico,* Volume 9 (Albuquerque: Archaeological Society Press, 1984):156-167; idem, "Ecology and Exchange: The Dynamics of Plains-Pueblo Interaction," in *Farmers, Hunters, and Colonists: Interaction Between the Southwest and the Southern Plains,* ed. Katherine A. Spielmann (Tucson: University of Arizona Press, 1991): 107-127; Frances Joan Mathien and Randall McGuire, eds. *Ripples in the Chichimec Sea: Consideration of Southwestern-Mesoamerican Interactions* (Carbondale, IL: Southern Illinois University Press, 1986); Randall H. McGuire, "Economies and Modes of Production in the Prehistoric Southwestern Periphery," in *Ripples,* 243-269; idem, "The Greater Southwest as a Periphery of Mesoamerica," in *Centre and Periphery: Comparative Studies in Archeology,* ed. Timothy Champion (London: Unwin, 1989): 40-66; Katherine A. Spielmann, "Colonists, Hunters, Farmers: Plains-Pueblo Interaction in the Seventeenth Century," in *Columbian Consequences,* Volume 1: *Archaeological and Historical Perspectives on the Spanish Borderlands,* ed. David Hurst Thomas (Washington, D.C.: Smithsonian Institution Press, 1989):101-113; idem, ed., *Farmers, Hunters, and Colonists: Interaction Between the Southwest and the Southern Plains* (Tucson: University of Arizona Press, 1991); idem, "Interaction Among Nonhierarchical Societies," in *Farmers,* 1-17; idem, "Coercion or Cooperation? Plains-Pueblo Interaction in the Protohistoric Period," in *Farmers,* 36-50; idem, Steadman Upham, *Polities and Power: An Economic and Political History of the Western Pueblo* (New York: Academic Press, 1982); idem, "Imperialists, Isolationists, World Systems and Political Realities:

Perspectives on Mesoamerican-Southwestern Interaction," in *Ripples*, 205-219; idem, "Interaction and Isolation: The Empty Spaces in Panregional Political and Economic Systems," in *Resources, Power, and Interregional Interaction*, ed. Edward Schortman and Patricia Urban (New York: Plenum Press, 1992):139-152; David R. Wilcox, "Changing Contexts of Pueblo Adaptations, A.D. 1250-1600," in *Farmers*, 128-154; idem, "The Evolution of the Chacoan Polity," in *Chimney Rock Achaeological Symposium*, ed. J. McKim Malville and Gary Matlock, USDA Forest Service General Technical Report RM-227 (Fort Collins, CO: USDA Forest Service, 1993): 76-90.

57. Edward P. Dozier, *The Pueblo Indians of North America* (New York: Holt, Rinehart and Winston, 1970).

58. W. H. Wills and Robert D. Leonard, eds., *The Ancient Southwestern Community: Models and Methods for the Study of Prehistoric Social Organization* (Albuquerque: University of New Mexico Press, 1994).

59. Elizabeth Brandt, "Egalitarianism, Hierarchy, and Centralization in the Pueblos," in *The Ancient Southwestern Community*, 9-23; Keith W. Kintigh, "Chaco, Communal Architecture, and Cibolan Aggregation," in *The Ancient Southwestern Community*, 131-140.

60. Katherine A. Spielmann, "Clustered Confederacies: Sociopolitical Organization in the Protohistoric Rio Grande," in *The Ancient Southwestern Community*, 45-54; Kintigh, op.cit.; Gregory A. Johnson, "Organizational Structure and Scalar Stress," in *Theory and Explanation in Archeology*, ed. Colin Renfrew, Michael J. Rowlands, and B. Segraves (New York: Academic, 1982): 389-421; idem, "Decision-making Organization and Pastoral Nomad Camp Size," *Human Ecology* 11:2 (1983): 175-199; idem, "Dynamics of Southwestern Prehistory: Far Outside—Looking In," in *Dynamics of Southwest Prehistory*, ed. Linda S. Cordell and George J. Gumerman (Washington, D.C.: Smithsonian Institution Press, 1989): 371-389.

61. Kintigh, op.cit., 138; Jill E. Neitzel, "Boundary Dynamics in the Chacoan Region System," in *The Ancient Southwestern Community*, 109-240; Wilcox, "The Evolution of Chacoan," and the references therein.

62. Gary Feinman, Linda Nicholas, and Steadman Upham, "A Macroregional Comparison of the American Southwest and Highland Mesoamerica in Pre-Columbian Times: Preliminary Thoughts and Implications" in *Pre-Columbian World Systems*, 65-76.

63. Spielmann, *Farmers*; idem, "Interaction Among"; idem, "Coercion or." Other sources on Plains-Pueblo interaction are Baugh, "Southern Plains"; Judith A. Habicht-Mauche, "Evidence for the Manufacture of Southwestern-Style Culinary Ceramics on the Southern Plains," in Spielmann, *Farmers*, 51-70; Spielmann, "Colonists, Hunters"; David R. Wilcox, "Multi-Ethnic Division of Labor in the Protohistoric Southwest During the Protohistoric Period," in *Papers of the Archaeological Society of New Mexico* 9 (Albuquerque: Archaeological Society Press, 1984), 141-154; David R. Wilcox and W. Bruce, eds., *The Protohistoric Period in the North American Southwest, AD 1450 - 1700*, Anthropology Research Papers, No. 24 (Tempe: Arizona State University Press, 1981).

64. Baugh, "Ecology and Exchange"; Wilcox, "Changing Contexts." The term *macroeconomy* was first used by Baugh, "Southern Plains."

65. Much of this debate is, itself, an artifact of the ethnographic record which derives from periods when Pueblos were at a low cycle of centralization exacerbated by the effects of Spanish occupation on them. For more details see Hall, *Social Change*, and Frances Levine, "Economic Perspectives on the Comanchero Trade," in Speilmann, 155-169.

66. Gregg, *Between State and Band*; Spielmann, "Interaction Among," and "Coercion or"; Baugh, "Ecology and"; Wilcox, "Changing Contexts"; Lawrence H. Keeley, *War Before Civilization: The Myth of the Peaceful Savage* (New York: Oxford University Press, 1996), especially 124, but scattered throughout his discussion; Hall, *Social Change*.

67. *Rise and Demise*, chapter 6.

68. Randall H. McGuire, "The Limits of World-Systems Theory for the Study of Prehistory," in *Pre-Columbian World-Systems*, 51-64.

69. David R. Wilcox, "The Entry of Athapaskans into the American Southwest: The Problem Today," in *The Protohistoric*, 213-256; idem, "Changing Contexts"; Baugh, "Ecology."

70. Hall, *Social Change*.

71. The literature on this connection is immense. The first explicit world-systems approach was by Richard A. Pailes and Joseph W. Whitecotton, "Greater Southwest and Mesoamerican World-Systems," a paper presented at the meeting of the Southwestern Anthropological Association, Santa Fe, NM, March, 1975. This was subsequently published as "The Greater Southwest and Mesoamerican 'World' System: An Exploratory Model of Frontier Relationships," in *The Frontier: Comparative Studies*, volume 2, ed. William W. Savage and Stephen I. Thompson (Norman: University of Oklahoma Press, 1979), 105-121. Next were Phil C. Weigand and Garman Harbottle, "Turquoise Sources and Sources of Analysis: Mesoamerica and the Southwestern U.S.A.," in *Exchange Systems in Prehistory*, ed. Timothy K. Earle and Jonathan E. Ericson (New York: Academic Press, 1977), 15-34; and Jonathan Friedman and Michael Rowlands, "Notes Toward an Epigenic Model of the Evolution of 'Civilization'," in *The Evolution of Social Systems*, ed. Jonathan Friedman and Michael J. Rowlands (London: Duckworth, 1977), 201-278 (simultaneously published by University of Pittsburgh Press in 1978). A spate of articles followed, most of them reviewed in Mathien and McGuire, *Ripples*. Richard Blanton and Gary M. Feinman, "The Mesoamerican World System," *American Anthropologist* 86:3 (September 1984): 673-682 was another important contribution, as were Randall H. McGuire, "The Mesoamerican Connection in the Southwest," *Kiva* 46:1-2 (1980): 3-38; idem, "Economies and Modes"; idem, "The Greater Southwest as"; and idem; "The Limits." More recent literature is reviewed by Ericson and Baugh, *The American Southwest*; and Steadman Upham, Gary Feinman, and Linda Nicholas, "New Perspectives on the Southwest and Highland Mesoamerica: A Macroregional Approach," *Review* 15:3 (Summer 1992): 427-451; Stephen Plog, *Ancient Peoples of the American Southwest* (London: Thames and Hudson, 1977).

72. By this we do not mean to downplay the underdevelopment often caused by incorporation into capitalist world-systems. Rather, depending on the specifics of a world-system, incorporation sometimes does have developmental consequences. We discuss this in more detail in *Rise and Demise*, chapters 2 and 12.

73. Phil C. Weigand and Garman Harbottle, "The Role of Turquoises in the Ancient Mesoamerican Trade Structure," in Ericson and Baugh, *The American Southwest*, 159-178. For a somewhat contrary view, see Plog, *Ancient Peoples*.

74. Anderson, *The Savannah River*, 83; he also discusses this figure in "The Role."

75. Brian M. Fagan, *Ancient North America: The Archaeology of a Continent* (London: Thames and Hudson, 1991); and Plog, *Ancient Peoples*.

76. In the Aztec empire, *pochteca* were important agents of the king who were sent on distant missions to trade and to obtain political and military intelligence. It is thought that earlier Mesoamerican states also had long-distance specialists.

77. Julian Steward, "Basin-Plateau Aboriginal Sociopolitical Groups," *Bureau of American Ethnology, Bulletin 120* (Washington, D.C.: Smithsonian Institution, 1938); idem, *A Theory of Culture Change: The Methodology of Multilinear Evolution* (Urbana: University of Illinois Press, 1955).

78. J. A. Bennyhoff and Richard E. Hughes, "Shell Bead and Ornament Exchange Networks between California and the Great Basin," *Anthropological Papers of the American Museum of Natural History* 64:2 (1987); Richard E. Hughes, "Mosaic Patterning in Prehistoric California-Great Basin Exchange," in Baugh and Ericson, 363-384.

79. Recall the excursus on terminology in the introduction. On the precise meaning of "big man," see Marshall D. Sahlins, "Poor Man, Rich Man, Big-Man, Chief: Political Types in Melanesia and Polynesia," *Comparative Studies in Society and History* 5:3 (April 1963): 285-303; idem, *Tribesmen* (Englewood Cliffs, NJ: Prentice-Hall, 1968).

80. Kowalewski, "Corn"; Kenneth M. Ames, "The Archaeology of the *longue duree*: Temporal and Spatial Scale in the Evolution of Social Complexity on the Southern Northwest Coast," *Antiquity* 65 (1991): 935-945; Donald Mitchell and Leland Donald, "Some Economic Aspects of Tlingit, Haida and Tsimshian Slavery," *Research in Economic Anthropology* 17 (Greenwich, CT: JAI Press, 1985): 119-35; Brian Hayden and Rick Schulting, "The Plateau Interaction Sphere and Late Prehistoric Cultural Complexity," *American Antiquity* 62 (1997): 51-85.

81. *Tribelet* is not our term, but the one used thus far in the literature. There is some controversy surrounding this term, some centering on the political issues discussed in the introduction and some on the precision of the term. For much more detail on Northern California, see Chase-Dunn and Mann, *The Wintu; Rise and Demise*, chapter 7.

82. Anderson, *The Savannah River*. We must caution against reading this paragraph as implying a teleological explanation. Cycling could go on indefi-

nitely. Typically, however, the secular trend toward population growth and repeated cycles will lead to the formation of a state. It is instructive to note that secondary states, that is, those formed in reaction to already existing states, are far more common than primary states or those that develop from nonstate forms of society.

83.   Anderson, *The Savannah River*, chapter 7.

84.   Anderson, *The Savannah River*; Joseph A. Tainter, *The Collapse of Complex Societies* (Cambridge: Cambridge University Press, 1988); *Rise and Demise*, chapter 6.

85.   *Rise and Demise*, chapter 5.

86.   Anderson, *The Savannah River*.

87.   Thomas D. Hall, "Historical Sociology and Native Americans: Methodological Problems," *American Indian Quarterly* 13:3 (Summer 1989): 223-238; G. William Skinner, "Presidential Address: The Structure of Chinese History," *Journal of Asian Studies* 64:2 (February 1985): 271-292.