

adaptive systems is everywhere in this book (and has by far the longest list of entries in its index).

Does the attempt succeed? Of course not; it can't. No one can judge an emerging theory until it has finished emerging. The veil of the temple is always trembling, and there's no way to know if what is coming forth is the Darwinian revolution or just the dawning of the Age of Aquarius, whether complex adaptive systems are an immensely fruitful way of thinking about the world or just so much phlogiston.

Nevertheless, in order to describe a theory of really everything, Gell-Mann has to describe really everything, or close enough as makes no difference, and this is a task for which he is singularly well equipped. In addition to all the big stuff about the heterotic string and the importance of disorder in evolution and the transition to a sustainable world, this book is about Charles Bennett's definitions of crypticity and depth, about the system of the naming of the California coast, about Arthur Lintgen, who, by looking at the grooves of a long-playing record, could determine the composer of the music recorded on it, about the practice of deception among the birds, and about Arthur Gell-Mann, the author's father, who learned English so well that "the only way one might have guessed he was foreign born was by noticing he never made any mistakes."

Whatever you think of the forest, these are quite some trees. This book is a grand tour of one of the most powerful and richly structured complex adaptive systems of our time, the mind of Murray Gell-Mann. The tour is very much worth taking.

Sidney Coleman
Department of Physics,
Harvard University,
Cambridge, MA 02138, USA

Emergence of Civilization

The Uruk World System. The Dynamics of Expansion of Early Mesopotamian Civilization. GUILLERMO ALGAZE. University of Chicago Press, Chicago, 1993. xii, 162 pp., illus. \$39.95 or £31.95.

World systems theory, based on the pioneering work of Immanuel Wallerstein, has received considerable attention in archeology in recent years. Although it is more obviously relevant to recent periods—Wallerstein concentrates on the development of the capitalist world system—scholars have also explored its applications to precapitalist societies, including prehistoric ones.

Algaze's book falls squarely within the growing archeological literature that views the Wallersteinian concept of world system as applicable to the ancient world, in this case the late prehistoric development of Mesopotamian civilization. However, Algaze does not attempt to provide a detailed treatment or justification of the use of world systems theory in the study of ancient civilizations. He is content to state his conviction that the concept is useful, even necessary, and move on from there.

The particular focus of the book is the so-called Late Uruk expansion, a subject that has long intrigued scholars of Mesopotamia. Archeologists have traced late-fourth-millennium-B.C. Uruk artifacts, architectural styles, and bureaucratic accounting practices—presumably originating in the southern Mesopotamian alluvial lowlands, now part of Iraq—over a vast geographical area, from the Iranian plateau and the Zagros valleys to southeastern Anatolia and Egypt. After no more than a couple of centuries at most this widespread distribution of material culture appears to have been replaced by a marked regionalization.

Algaze proposes that the "Late Uruk expansion" is best explained as an example of "informal empire." He argues that while some empires arise strictly as political entities whose

main goal is to acquire territory over which they exert direct control, there are other kinds of imperial formations that are based on economic relationships. Algaze stresses in particular the importance of control over long-distance trade as an avenue by which empires might arise. This is an appealing topic to most scholars studying Mesopotamia, a "resource-starved" (p. 18) alluvial region lacking in such seemingly essential resources as stone, metal, and high-quality timber.

In brief, Algaze's argument runs as follows. A world systems approach instructs us to look at systems from a "global" perspective. Such a perspective is necessary if we are to have an adequate understanding of the interregional expansion of the Late Uruk period. Trade of resources available in the highland regions that surrounded alluvial Mesopotamia must have been necessary to sustain the growth of socially and politically complex Uruk societies in the lowlands. Therefore, Uruk society sought to control the all-important trade routes in order to ensure that needed resources were funneled their way on the best possible terms.

To support his argument, Algaze reviews the evidence for settlements outside the alluvial lowlands in which Uruk-style artifacts or architecture have been found. He distinguishes between several different types



"Stamp seals and stamp seal impressions from Uruk levels at Warka of possible northern or highland origin." [From *The Uruk World System*]

of settlements: enclaves, consisting of one or more larger sites surrounded by smaller villages; stations and outposts, which are smaller, isolated sites with predominantly Uruk material; and sites of outright colonial implantation, in which Uruk colonies wholly supplant the indigenous communities. He maintains that all of these sites are located along or at junctures of important, historically known trade routes and were therefore positioned to control the movement of goods into and out of the alluvial lowlands. Because these settlements are located, in most cases, in regions—and often in the same communities—that contain contemporary settlements with indigenous material culture, Algaze contends that they could not represent territorial expansion or exploitation of agricultural potentials but rather indicate colonization for the sole purpose of exercising control over trade.

Despite the allure of Algaze's formulation, I find some problems with it. First, he has a strong tendency to treat societies as monolithic, homogeneous entities. He argues that society in the alluvial lowlands experienced only benefits from the purported imperial interactions while those in the peripheral highland regions, after some initial positive consequences, felt

only negative effects. Such an interpretation leaves no place for intrasocietal factions, politics, and strategic maneuvering. Although detailed data are not yet available, there is every reason to believe that substantial incursions of people of the sort envisioned by Algaze would have encountered quite varied receptions from indigenous peoples in the peripheries. It is by no means clear that alluvial society (or societies) had the power to enforce their projects in the face of significant local resistance.

Algaze also frequently falls prey to the common archeological temptation to assume that "pots equal people." He tends to regard the finding of certain styles of artifacts (including but not limited to pottery) and architecture at a wide array of sites as evidence that "Uruk people" (whoever they were!) moved there. This is certainly one possibility, but it is not the only one. As Algaze himself notes—but does not pursue extensively enough, in my view—people make claims to prestige and power through the acquisition, display, and use of material objects. The assembled evidence does not allow us to rule out the possibility that the presence of Uruk styles of artifacts and architecture outside the alluvial lowlands

represents not the movement of people but rather the emulation by locals of a foreign, prestigious style of doing things.

Although I am not convinced by Algaze's argument, I find much of value in this book. In addition to providing the sole comprehensive, up-to-date compilation of data on the Uruk and Late Chalcolithic periods, he directs our attention to the importance of placing our knowledge in a global framework. Algaze's controversial ideas have already stimulated much debate and new research as scholars search for refinements to or alternative interpretations of the Late Uruk "phenomenon."

Susan Pollock

*Department of Anthropology,
State University of New York,
Binghamton, NY 13902, USA*

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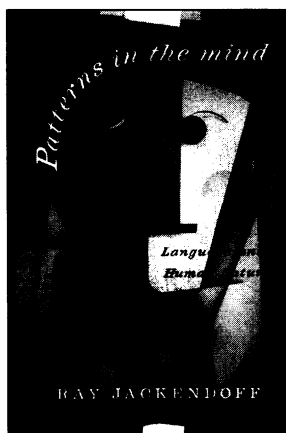
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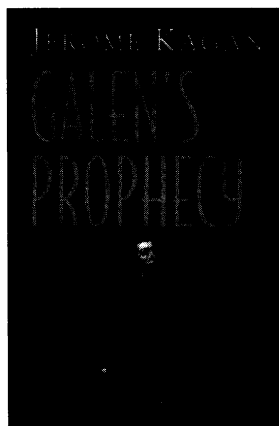
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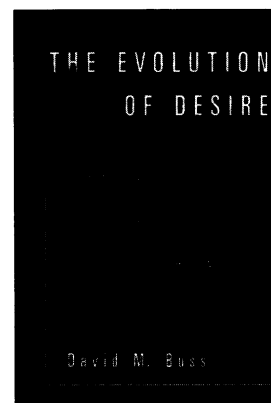


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