Contact and Exchange in the Ancient World. Edited by Victor H. Mair. Honolulu, HI: University of Hawai'i Press, 2006. Pp. ix + 310. $57.00.

All of the authors in this collection agree that the societies of ancient Eurasia interacted with each other for many millennia. Each of them uses various kinds of evidence—linguistic, textual, and archaeological—to tease out subtle linkages that connected Eurasian societies over vast distances. Put together, this work makes us radically rethink our view of ancient societies. Instead of considering globalization as an exclusively modern process, we have to recognize the constant flow of ideas and materials and people that characterized the human web from earliest times. And instead of thinking in terms of isolated civilizational units, we must accept that all the ancient societies constantly imported, exported, adapted, and exchanged elements with each other.

Victor Mair develops these points in a well-documented and pointed critique of the dominant doctrine of independent innovation. In his view, far too many archaeologists and ancient historians refuse to accept arguments for influences from outside their pet civilization, or even to bother to look across the borders. Several trends have reinforced this insularity in the postwar period: the rise of independent nation-states out of anti-colonial movements led to intensified stress on indigenous cultural features; disciplinary isolation separated archaeologists from historians, and historians of one region from historians of another. Nationalists attacked the doctrine of diffusionism, which had a strong voice before the second World War, as an agent of imperialism, which denied colonized peoples their autonomy. Now, in our globalizing age, cultural interaction between civilizations of equal status has revived diffusionism in a much less biased form. Most scholars have yet to catch up with the new global news.

Jerry Bentley likewise argues for world historians to overcome the concept of a sharp divide in contacts occurring at around the sixteenth century. Although the speed and scale of contact certainly increased after the sixteenth century, the inhabitants of both Old and New worlds had already established extensive trading networks within their continents before the new contact occurred. Bentley's essay, however, raises the critical issue of when quantity changes into quality: how much contact is enough to generate substantial social change? Why did the conquests by small numbers of Spanish invaders shatter native empires, while the native empires themselves failed to destroy each other for centuries before then? He does not really address this issue.

The noted Oxford archaeologist Andrew Sherratt sketches a model of an expanding sphere of cultural interactions over millennia of time, illustrated by vivid coloured maps. He, too argues against strongly entrenched assumptions of indigenous development, and calls for more sophisticated models of intercultural contact. For China in particular, he points to the vital impact of metallurgy and animal power on early Chinese civilization. Both technologies came across the Central Eurasian steppe and through the Siberian forests. Metallurgical techniques, including gold, silver, copper, bronze, and iron, moved across Eurasia in many directions. Horse riding, the premier nomadic technology, moved outward from Central Eurasia both to the east and west. On the other hand, cultural contact did not make Eastern and Western Eurasia the same. Western Eurasians used several kinds of metals, like silver and gold, primarily as sheet metal for making containers for alcoholic

beverages. China, by contrast, developed to unprecedented heights the use of cast bronze for very large sacrificial vessels. Unlike Western Asia, the introduction of iron did not displace bronze, because bronze retained strong ritual value, even if it was less technically appropriate. Thus he calls for replacing simple one-way models of diffusion with dialectical processes of interacting external and internal innovation.

Elfrida Regina Knauer contributes an extraordinarily wide ranging study demonstrating the Western origins of the famous Chinese goddess known as "Xiwangmu" or Queen mother of the West. Shang dynasty texts referred to her as a primordial mother deity, but she only appeared in pictorial form in the late Han dynasty. She appeared in a classic frontal pose, seated on a throne entwined with animal figures, and wearing a curious headdress. But the Greeks had worshipped the goddess Kybele and portrayed her in a very similar fashion, seated on a throne surrounded by animals. Her image is found on coins from Kushan, in modern Afghanistan. The Kushan kingdom, famous for its Gandharan sculptures—Buddhist images in Greco-Roman style—created a cultural bridge between East and West. The headdress itself was a misinterpretation by Eastern recipients of the poles of the highbacked throne. This fascinating story gives great detail on the exact transmission of a religious and artistic motif over long distances and time periods, while also carefully distinguishing how the figure changed form because of local influence and creative mistranslation.

Thomas Allsen discusses the circulation of hunting with "leopards" (actually cheetahs) across Eurasia, combining useful zoological knowledge with information on hunting practices, breeding, and symbolism of royal hunts. The Arab world first domesticated the animal, taking young cubs from their mothers and training them carefully to pursue prey. Once they knocked down their prey, the human hunters quickly took the animal away and finished off the victim. Many societies have used hunting animals and birds, and they all face three basic problems: getting the animals to remain quiet before the hunt, giving them energy to pursue their natural prey, and preventing them from eating the prey after the kill. Very few species can work with humans this way, but humans have developed elaborate techniques to train falcons, cheetahs, and cormorants. Clearly these special skills travel widely once they are perfected, so Arab techniques of using cheetahs spread to East Eurasia along networks of conquest and trade. I would like to have seen Allsen discuss the similar travels of falcon hunters across Central Eurasia by way of comparison. And I wonder if cormorant fishing flourished only in Japan or China, or if it spread more widely? Allsen also introduces a nuanced model of cultural interaction, borrowing the idea of "peer polity interaction" from Colin Renfrew. Again, there is no single centre of innovation, but multiple groups engaging in competitive emulation. This gave the royal hunt a common character all across Eurasia.

Peter Golden relies exclusively on linguistic evidence for his survey of the origins and development of Turkic peoples. I find his exclusively philological approach rather frustrating, because of the indeterminacy and profusion of arguments in this highly contestable field of Türkology. Combining material and visual artifacts with linguistic evidence would be a great advance. Golden introduces some new theories, such as the idea that southern Manchuria was a centre of origins for Turkic peoples rivaling the Altai, and makes very interesting points stressing connections of the ancient Turkic world with Eastern Iran and Eastern Turkestan. He broadens the conventional definitions of where the Türks

resided and connects his inquiry with discussions of the role of borderlands in creating identities in Europe. In this field too, scholars have drifted away from the incessant search of nationalists for a single centre of origin of one ethnic group to an interest in borderlands as active sites generating new identities for mixed cultural federations.

Michael Witzel deploys an ingenious technique to tease out information about peoples who inhabited Eastern Eurasia before the arrival of the Indo-Europeans. By examining words in ancient India Vedas and the Persian Avesta which are clearly not part of the proto-Indo-European vocabulary, he can draw inferences about the locations and living conditions of peoples who preceded the Indo-Iranian impact. He uses the important discovery of the Bactria-Margiana Archaeological Complex (BMAC) in southern Turkmenistan to suggest northern Iranian sources for many of these words. Terms for camel, donkey, brick, wheat, irrigation channels and the hallucinogenic soma plant preceded the Indo-Iranians. These people had created a cultural complex which formed in contact with the earlier civilizations of Western and South Asia. The BMAC complex is the key missing link between the cultural centers of Western and Eastern Asia.

Irene Good looks at textile production in Western Asia, focusing on the Iran-Turkmenistan border in the third millennium BCE. She finds substantial presence of imported textiles from Mesopotamia, and shifting, inconsistent interactions between regional centres. She, too, proposes an improved model of interaction, replacing simple core-periphery concepts with a concept of a "world economy" with separate but interconnected "nodes of development." I had not realized that spindle whorls could be such a revealing indication of cultural formation. If it is true that women were the dominant textile producers, as is usually the case, then we have a crucial piece of insight into the gendered character of these commercial networks.

Yan Sun is one of the young pioneers of new approaches to archaeology, having co-authored a pathbreaking book on Gender and Chinese Archaeology with her teacher, Katherine Linduff. In a video on her Gettysburg College web site she explains her passion for studying how material artifacts reveal connections between the Chinese and other peoples on the periphery. In this chapter, she applies a regional interaction model to China, giving a fresh view of the Zhou dynasty state system. The Yan state, near modern Beijing, was a "core" representative in frontier territory, but it drew for its styles of bronze vessels on regions all across China, ranging as far as Sichuan, Jiangxi, and far into the northwest. Despite the diversity of styles, Zhou styles dominated, and Yan followed the Zhou *zongfa* kinship system in its burial sites. This analysis suggests that Yan was a classic colonial frontier outpost, mirroring the centre in its core structure while drawing from many other parts of the system for other goods. It remains unclear whether these diverse bronzes came via trade and tribute through the Zhou centre, directly from other vassal states, or were produced locally using foreign designs. Yan Sun reasserts the power of centrality in the Zhou state system while also recognizing the powerful influence of cultural diversity within it. I very much look forward to further work by her on this subject.

John L. Sorenson and Carl L. Johannessen contribute the most astonishing paper in the entire collection by amassing substantial biological evidence for transoceanic contacts before the arrival of Columbus. The hookworm, originating in tropical Asia, infected native Americans before the Columbian exchange; it cannot survive in cold climates, so it could

not have made it over the Bering straits bridge. It must have come by sea. Grain amaranths native to the New World appear in ancient Chinese texts and Indian archaeological sites. The sweet potato moved from MesoAmerica to Polynesia around 400–700 CE and appears in a Chinese list of plants in *c.* 300 CE. Egyptian mummies have tobacco in their tissues, and Peruvian mummies contain hashish from the Old World. The peanut, the classic New World product, crops up in Western Han tombs in China and in Timor. Even maize, given so much credit for stimulating Chinese agrarian production after the sixteenth century, shows up in Indian temple carvings from much earlier times, and so do chili peppers. In the authors' words, "There is not the slightest question that maize was carried from America to Asia millennia ago" (p. 253). Turkeys went to thirteenth- century Scandinavia, and so did American soft-shell clams. If so much flora and fauna moved across the oceans, cultural features must have gone with them. Now the puzzling similarities of board games, pottery designs, religious rituals, and words across the oceans fit a very well documented picture of constant transoceanic interaction. In the authors' words, the very terms "Old World" and "New World" have "outlived their usefulness."

I am not competent as a biologist to judge their particular examples, but they seem to have amassed powerful evidence for intercontinental contact before the sixteenth century. The title of their chapter, "Biological evidence for Pre-Columbian Transoceanic Voyages," however, is somewhat misleading. Not all of these goods had to go by open sea: humans could have carried seeds of many valuable crops across the short strait from Alaska to Siberia, or they could have travelled by short hops along the coast. Yet Polynesian seafarers did go very long distances, so even great sea voyages are not implausible. If we accept their argument, other fascinating puzzles open up: if maize, peanuts, and chilies already existed in Asia for centuries, why were they not widely planted? What stimulated the take-off of Old World biota if it was not exogenous introduction? Or was there cross-breeding between native and imported varieties that stimulated new hybrids, combined with social and economic pressures to give the new crops a powerful push? Further genetic and archaeological and art analysis will probably reveal much more of this fascinating story.

In short, defeating the entrenched champions of isolated innovation is only a first step. China, long considered one of the world's most isolated great civilizations, will not escape these new approaches. Once we recognize the constant flow in and out of China not just of nomadic horsemen but of material goods and ideas, and China's other linkages to the southwest borders and maritime Southeast Asia, there is no reason not to include China along with the other great civilizational complexes in a single interconnected chain of exchanges that persisted for thousands of years.

Once we accept constant intercultural interaction, we need to find appropriate frameworks for explaining innovation and interaction. Simple diffusion from an advanced core to a backward periphery fails to capture the variety of mechanisms of cultural exchange. The newer concepts of proto-world systems, peer polity interactions, and dialectical exchange, combined with a stunning array of new evidence, should radically reshape how we see the expansion of the human web over the long term.

PETER C. PERDUE
Massachusetts Institute of Technology