Archaeology and Language

The Indo-Iranians

by C. C. Lamberg-Karlovsky

This review of recent archaeological work in Central Asia and Eurasia attempts to trace and date the movements of the Indo-Iranians—speakers of languages of the eastern branch of Proto-Indo-European that later split into the Iranian and Vedic families. Russian and Central Asian scholars working on the contemporary but very different Andronovo and Bactrian Margiana archaeological complexes of the 2d millennium B.C. have identified both as Indo-Iranian, and particular sites so identified are being used for nationalist purposes. There is, however, no compelling archaeological evidence that they had a common ancestor or that either is Indo-Iranian. Ethnicity and language are not easily linked with an archaeological signature, and the identity of the Indo-Iranians remains elusive.

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Once upon a time—no one really knows how long ago—there was a community that spoke a language known today as Proto-Indo-European. For almost two centuries scholars have been trying to locate the time and the place and to reconstruct that language. Several recent works by archaeologists and linguists on the origins and eventual spread of Proto-Indo-European-related languages—Germanic, Slavic, Romance, Iranian, Indic, Albanian, Baltic, Armenian, Tocharian, and Greek —from India to England offer new perspectives on this centuries-long debate. Among these the work of Renfrew (1987), Mallory (1989), Gamkrelidze and Ivanov (1984, 1995), and Mallory and Mair (2000) are of greatest interest. The archaeologist Renfrew contends that the Proto-Indo-European settlement was located in Anatolia around 7000–6500 B.C. and its subsequent spread can be attributed to a superior technology: the invention of agriculture. The linguists Gamkrelidze and Ivanov situate the homeland of Proto-Indo-European a few millennia later in the nearby Caucasus. Mallory and Mair agree with their 4th-to-5th-millennium date but place the homeland in the Pontic-Caspian steppes.

Whatever the location of its homeland and the timing of its dispersal, there is agreement that the Proto-Indo-European community split into two major groups. One group migrated west to Europe and became speakers of Indo-European (all the languages of modern Europe save for Basque, Hungarian, and Finnish), while the other headed east to Eurasia to become speakers of Indo-Iranian (fig. 1). Indo-Iranian split into Iranian and Vedic or Indo-Aryan. The Iranian languages are those of Iran (Iranian), Pakistan (Baluch), Afghanistan (Pashto), and Tadjikistan (Tadjik), and the Indo-Aryan languages are Hindi and its many related languages. In this review I am seeking to trace and date the movement and language of the Indo-Iranian community.

The Theorists: Archaeologists, Linguists, and Others

With the renewed interest in the relationship between archaeology, language, and archaeogenetics, new solutions are being offered for old problems (Cavalli-Sforza, Menozzi, and Piazza 1994; Kohl and Fawcett 1995; Meskell 1998; Renfrew and Boyle 2000). The search for the Indo-Europeans in an archaeological context is almost as old as archaeology. Raphael Pumpelly's (1908) highly regarded excavations at Anau, Turkmenistan, were motivated by such a search, and they had a profound influence on V. G. Childe (1928). Renfrew (1999), reviewing the status of the origins and dispersal of the Indo-European languages, suggests that the immediate ancestor of the Indo-Iranian languages "may perhaps find its material counterpart in the Cucuteni-Tripolye culture of the Ukraine" (1999:280). He argues for an eastward dispersal of Indo-Iranian-speakers after 3000 B.C. He offers no "cause" for this dispersal but believes it unrelated to horse riding, which he attributes to a later-2d-millennium adaptation. He places the dispersal of Indo-Iranian
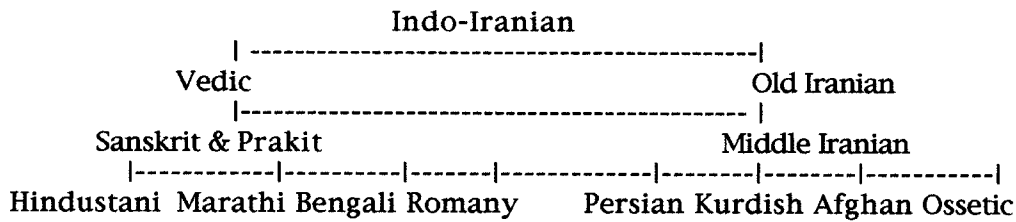
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                        Indo-Iranian
           |------------------------------------------------|
        Vedic                                          Old Iranian
           |---------------------------------------------- |
    Sanskrit & Prakit                                  Middle Iranian
       |-----------|----------|-------|-------------|--------|--------|-----------|
    Hindustani  Marathi Bengali Romany    Persian Kurdish Afghan Ossetic
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FIG. 1. *Hypothetical development of the Indo-Iranian languages.*

onto the Indian subcontinent around 1700 B.C. and invokes his "elite dominance model"—the subordination of the local populations by an elite group of charioteers, as described in the Rigveda—to describe it.

Elena Kuzmina (1994), in search of the homeland of the Indo-Europeans, examines the regions from the Balkans-Carpathians-Danube Basin to the Urals and the eastern steppes of Kazakhstan and places the establishment of the Proto-Indo-European community broadly between 4500 and 2500 B.C. and its subsequent spread in the range of 3200–2200 B.C. She favors an Indo-European homeland in the Pontic-Caspian zone and argues for a series of eastward migrations to the Urals. As a result of the movement of tribes along the Don Basin in the northern Caspian area and from the western steppes and the mountainous Crimea to the eastern steppes beyond the Urals, a productive subsistence economy based on cattle breeding and wheat and barley farming spread. The large-scale migrations of the Proto-Indo-Europeans, she believes, were motivated by the reduction of local food resources as a result of deteriorating climatic conditions and by a conscious search for new productive lands and modes of subsistence.

Reliance upon migrations as the principal agent of social change has been typical of Russian archaeological interpretations, along with a blurring of the distinction between ethnic, linguistic, racial, and cultural entities, the isolation of racial/ethnic groups by the craniometric methods of physical anthropology, and the use of linguistic paleontology to reconstruct the development of cultural groups. For instance, attempts have been made to identify the physical types of the various Andronovo populations, invariably by craniometric means (Alekseev 1967, 1986, 1989). These studies are more closely related to racial typology than more recent attempts to gauge degrees of biological affinity between populations residing in distinctive geographical settings (Malaspina et al. 1998, Voevoda et al. 1994). Skeletal remains from sites of the Bactrian Margiana archaeological complex have been compared with those of the Harappan civilization in terms of nonmetric cranial features and judged "profoundly" different (Hemphill, Christensen, and Mustafakulov 1995). These researchers believe that their study documents "gene flow from west to east, from western Iran to the oases of Central Asia" (p. 863). In their opinion the Bactrian Margiana complex either originated in or

passed through Iran. But the presence or absence of certain nonmetric features of the skull cannot be considered "gene flow" and hardly supports such a sweeping conclusion. There is absolutely no evidence that genes are involved in determining the presence or absence of the cranial features studied; there are numerous nongenetic factors that account for cranial features and their variation (for example, diet, infant cradling). To speak of "gene flow" suggests a degree of understanding of the *genetic* structure of the architecture of the skull that we simply do not currently possess.

The Archaeological Evidence

The principal actors on the archaeological stage are the Pit Grave culture(s) of the Pontic-Caspian steppe at 4000–2800 B.C., its descendant the Catacomb Grave culture(s) of 2800–2000 B.C., and its successors the Timber Grave (Srubnaja) culture(s) of 2000–1000 B.C. and the related Andronovo cultures of 2000–900 B.C. (see figs. 2 and 3). No two writers agree on the extent to which these entities are related. This is not surprising, for there is a conspicuous absence of formal descriptions, ceramic typologies, chronological sequences, and/or distribution analyses of the artifact types that are said to characterize them (Zdanovich 1984). Each of them is divisible into archaeological variants, and each variant has its advocate for its Indo-Iranian identity. Archaeologists describe the various "tribes" of the Pit Grave or the earlier Mariupol culture as inhabiting the region between the Dnieper and the Urals in the 4th millennium. The development of cattle breeding and the domestication of the horse are taken to be major 5th/4th-millennium developments on the Russian/Ukrainian steppes. These archaeological cultures are typically identified as Indo-European (Anthony 1991).

The Andronovo culture was first described by Teploukhov (1927) and has been the focus of archaeological research on the Ural/Kazakhstan steppe and in Siberia (Jettmar 1951). Kuzmina (1994) is among the majority of scholars who believe that the Andronovo is Indo-Iranian and forms a single cultural entity, albeit with regional variations. Increasingly, however, the concept of a single homogeneous culture covering 3 million square kilometers and enduring for over a millennium has become
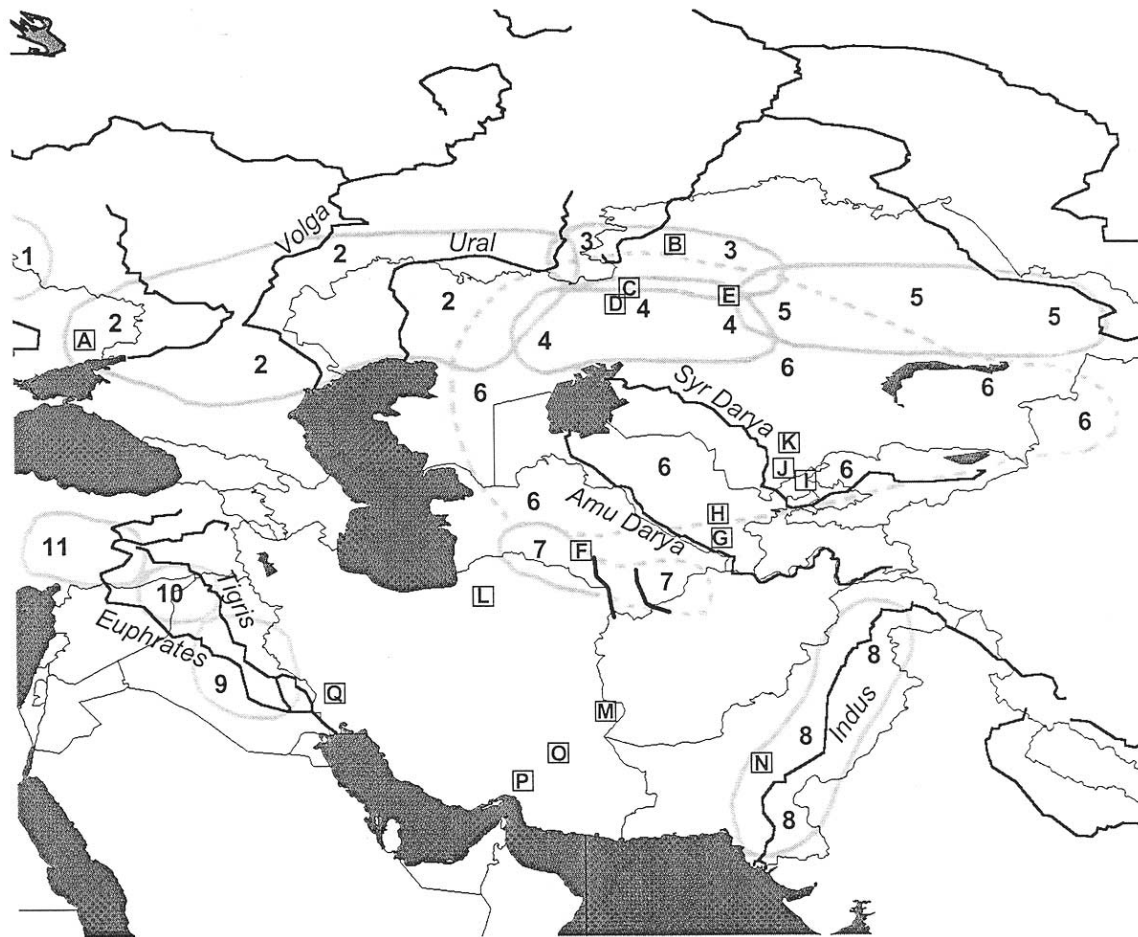
FIG. 2. *Principal archaeological sites and cultures mentioned in text. Sites:* A, *Mikhailovka;* B, *Petrovka;* C, *Arkhaim;* D, *Sintashta;* E, *Botai;* F, *Namazga;* G, *Gonur;* H, *Togolok;* I, *Dashly Oasis;* J, *Sapelli;* K, *Djarkutan;* L, *Hissar;* M, *Shahr-i-Sokhta;* N, *Sibri;* O, *Shahdad;* P, *Yahya;* Q, *Susa. Cultures:* 1, *Tripolye;* 2, *Pit Grave/Catacomb;* 3, *Sintashta/Arkhaim;* 4, *Abashevo;* 5, *Afanasievo;* 6, *Andronovo;* 7, *Bactrian Margiana archaeological complex;* 8, *Indus;* 9, *Akkadian;* 10, *Hurrian;* 11, *Hittite.*

untenable (Yablonsky 2000). Archaeologists working on the steppes are involved in giving new definitions—that is, distinctive chronological and cultural phases—to the cultures of the steppes (Kutimov 1999, Levine et al. 1999 and papers therein). Similarly, the nature of Andronovo interaction, its periodization, and its unstructured chronology are all subjects of heated discussion. Numerous subcultures have been identified: Petrov (also called Sintashta-Arkhaim-Petrovka), Alakul, Fedorovo, Sargarin, Cherkaskul, Petrovalka, Abashevo, Novokumak, and others. On the basis of the type of pottery and its technology, the absence of the pig, and the presence of camels, cattle, horses, psalia (distinctive decorative pieces, often of bone or ivory, attached to the reins at the ends of the bit), and chariots, Kuzmina argues for cultural continuity of the Andronovo from 2000 to 900 B.C. She uses ethnohistoric evidence to support the idea of the southern Urals as the homeland of the Indo-Iranians,

tracing the Iranian-speaking Sakas and Sauromatians of the 1st millennium back to the Andronovo tribes and suggesting that Indo-Iranian texts such as the Rigveda and the Avesta reflect the world of the Andronovo culture. In the Rigveda there is an admonition against the use of the wheel in the production of pottery, and the fact that Andronovo pottery is handmade is taken as evidence of its makers' Indo-Iranian identity.

In an effort to create a science of archaeo-linguistic correlations, Kuzmina (1994) devises the following methods for ethnic attribution: (1) retrospective comparison—comparison of the archaeological culture with a descendant culture whose ethnicity is established by written documents, (2) correlating the ethnic attribution derived by the retrospective method with lexicostatistical data on the level and type of economy, (3) determination of migration routes and the plotting of migration indicators through time and space, (4) anthro-
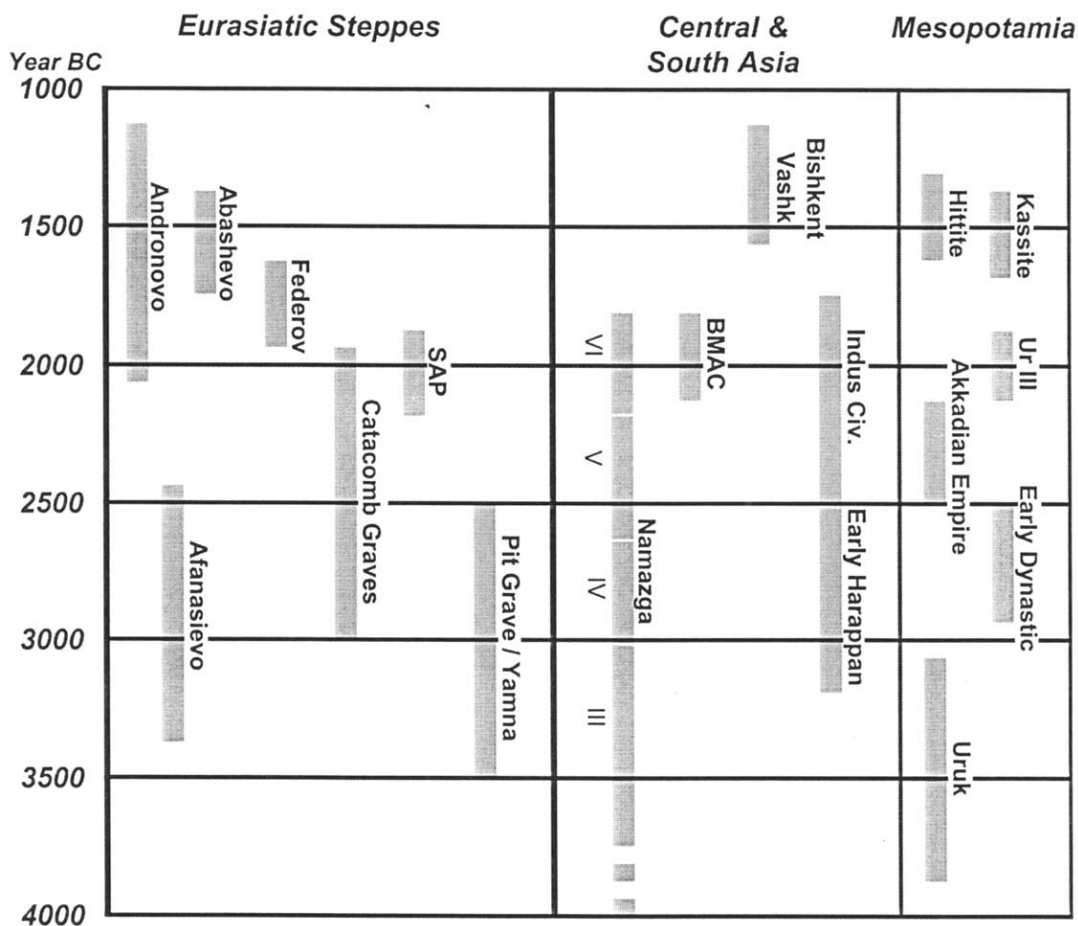
FIG. 3. *Relative chronology of major archaeological cultures.*

pometric analyses, believed to indicate a group's biological affinity, (5) study of linguistic substrates and toponymic correlations, and (6) the reconstruction of culture, cosmology, and worldview from archaeological and linguistic data. Using these methods, she assesses the Andronovo culture as Indo-Iranian and, more specifically, the Fedorovo culture (a late variant of the Andronovo) as Indo-Aryan. The ethnic indicators here are (1) the absence of the pig from the domestic diet, (2) the presence of the Bactrian camel, (3) the special significance of horse breeding, (4) the special role of chariots, (5) a cult of the horse associated with burial contexts, (6) vertically oriented tripartite vessels manufactured by coiling, (7) unique quadrangular pots, (8) cremation, and (9) houses with high, gabled roofs. Diakonoff (1995:147) concludes that with Kuzmina's methodology "the bearers of a certain archaeological culture can securely be identified with the bearers of a language of a certain group or with their ancestors."

The ethnic and linguistic identity of the Andronovo culture nevertheless remains elusive. A great deal is made of the importance of the horse in the Andronovo cultural context, but the role of horse riding as a stimulus to the development of sheep, goat, and cattle pastoralism and the relative dependence upon pastoral transhumance compared with sedentary agriculture is much debated. Given the absence of botanical data providing information about crops and the relative paucity of settlement archaeology—save for the newly discovered "country of towns"—we have virtually no understanding of the demographic situation on the steppes. Khazanov (1983:33–35) has shown that a shepherd can control up to 2,000 sheep when riding horseback as compared with fewer than 500 on foot. However, increase in herd size results in risks to the fragile environment of the steppes, and given the severe winters, the relative unavailability of water, and the failure of rainfall in as many as six out of ten years out-migration (diffusion) is inevitable (Khazanov 1983).

The Pit Grave Culture

Kuzmina (1994) is not alone in believing that the domestication of the horse introduced a new stage in the evolution of civilization. On the steppes the horse allowed for the increasing role of cattle breeding, the in-

tensification of interethnic communication, the development of plough traction, and the use of carts and wagons. By the middle of the 3d millennium these innovations were being used by tribes of the Pit Grave culture from the Danube to the Urals. The 4th-millennium Pit Grave culture was characterized by large fortified settlements (e.g., Mikhailovka), four- and two-wheeled wagons pulled by bulls or horses, intensive cattle breeding and farming, extensive use of metal tools, and burials under mounds (kurgans) containing carts, wagons, and sacrificed horses. The migrations of the Pit Grave culture(s) are considered by some scholars to be responsible for the emergence of stock breeding and agriculture in distant Siberia. With regard to horse riding Anthony (2000) supports an early date—late 4th/early 3d millennium—while Levine (1999) finds conclusive evidence only in the late 2d millennium. In light of the fact that texts refer to horse riding in late-3d-millennium Mesopotamia, where the domesticated horse was an obvious import, it would appear that Anthony is closer to the mark.

The warrior attributes that are evident in the Andronovo culture are frequently assigned to the Pit Grave culture. Axes, spears, bows and arrows, a rich variety of dagger types, and chariots all speak of conflict and confrontation, as do the heavily fortified communities. Sharp distinctions of rank are attested in burial sites. Kuzmina (1994) suggests that social position was defined more by social, ideological, and ritual activities than by property ownership. Russian archaeologists view the steppe cultures as a "transitional type." The concept of a "military democracy," derived from the work of Lewis Henry Morgan, remains popular and refers to the presence of a chief, a council, and a popular assembly. Khazanov (1979), while regarding the military democracy as a particular type of transitional society applicable to the social formations of Central Asian pastoral nomads, has also advocated the adoption of the concept of a "chiefdom" as a transitional form preceding the state.

Commenting upon the vehicle burials of the Pit and Catacomb Grave cultures, Stuart Piggott (1992:22) points out that over the past 40 years more than 100 kurgans with vehicles have been excavated but fewer than half have been published even in the briefest form. By contrast, Gening, Zdanovich, and Gening (1992) have published on the settlement and cemetery of Sintashta in the southern Urals, where ten-spoked-wheeled chariots, horse sacrifices, and human burials have been radiocarbon-dated to the 1st century of the 2d millennium B.C.

However horses may have been regarded on the steppes, in Mesopotamia the king of Mari, ca. 1800 B.C., is admonished not to ride a horse, lest he jeopardize his status: "You are the King of the Hanaeans and King of the Akkadians. You should not ride a horse. Let my king ride a chariot or on a mule and he will thereby honor his head" (Malamat 1989).

The Petrov, Alakul, and Fedorovo Cultures

The earliest of the Andronovo cultures would seem to be the Petrov, dated to the first centuries of the 2d millennium. The Petrov is succeeded by the Alakul, which, in turn, is followed by the Fedorovo, dated to the second half of the 2d millennium. Both the Alakul and the Fedorovo are frequently assigned an Indo-Iranian identity. Chernetsov (1973) and Stokolos (1972), however, argue for a Ugric substrate among the Andronovo tribes and a specific Indo-Iranian identity only for the Alakul, with the latter proposing a local development for the Fedorovo. Kuzmina (1994) accepts the cultural subdivisions of the Andronovo culture but often refers to cultural contact and migrations in the context of a singular Andronovo entity. She refers to Andronovo influence with regard to the introduction of specific axes and adzes of Andronovo type in distant Xinjiang. The relationships of the Andronovo with the cultures of Xinjiang are documented by Mei and Shell (1999).

P'yankova (1993, 1994, 1999) and Kuzmina (1994) are specific in linking the Andronovo culture with the 2d-millennium agricultural communities of Central Asia, the Bactrian Margiana archaeological complex. Sites of this complex and the related mid-2d-millennium Bishkent culture are seen by P'yankova as influenced by the Fedorovo tribes. Fedorovo ceramics, funeral rites, and metal (alloyed with tin) and skulls of the Andronovo anthropological type are said to be present in a number of Central Asian sites. There is consensus that throughout the 2d millennium migrations of the Andronovo tribes resulted in contact with the Central Asian oases, the cultures of the Tien Shan Mountains of Xinjiang, and the indigenous tribes of the Altai, Tuva, and Pamir Mountains.

The Timber Grave and the Sintashta-Arkhaim-Petrovka Cultures

Although Kuzmina (1994) identifies the 3d-millennium Timber Grave culture as Indo-Iranian, it is only in the Andronovo culture and, specifically, at the site of Sintashta that she believes one can document a cluster of specific Indo-Iranian cultural traits: (1) a mixed economy of pastoralism and agriculture, (2) handmade ceramics, (3) horse-drawn chariots, (4) cultic significance for the horse, fire, and ancestors, and (5) high status for charioteers. There are two contending hypotheses for the origins of the Sintashta-Arkhaim-Petrovka culture—as an indigenous culture with its roots in the earlier Botai culture of northern Kazakhstan (see Kislenko and Tatarintseva 1999) and as the result of a migration from the west (from the Abashevo and/or the Mnogovalikovo culture(s), themselves variants of the Timber Grave culture). Kuzmina appears to favor a western origin, while Zdanovich and Zdanovich (1995) appear to favor indigenous roots. Research on the question of origins is severely hampered by an inadequate chronological framework.

Despite the paucity of radiocarbon dates (Görsdorf et al. 1998), recent research in Kazakhstan has been able to trace an indigenous series of archaeological cultures from the Mesolithic to the Atbasar culture of the Neolithic, all preceding the diffusion of the Andronovo from the west (Kislenko and Tatarintseva 1999).

Excavations at Sintashta were initiated in 1972 under the direction of V. I. Stepanov and resumed in 1983 under the direction of G. B. Zdanovich and V. F. Gening. The settlement, subcircular in form, is 140 m in diameter and 62,000 km^2 in area. Its elaborate fortification system consists of an outer wall, a moat, and an inner wall with periodic buttresses believed to have formed towers. Entrance to the settlement is by way of two gates, each offering angled access and a movable bridge placed over a moat. Several two- or three-room houses with hearths, constructed of timber, wattle and daub, and unbaked brick, were excavated. Evidence for the production of metal as well as ceramics was found in some of the houses.

Two hundred meters northwest of the settlement a burial complex consisting of 40 graves with 60–65 inhumations was uncovered. The burials were placed in pits in which wooden structures were constructed and roofed with wooden beams. Single and multiple burials, adults and children, were placed in these wooden structures. The burials contained a wealth of material: vessels, daggers, pins, awls, needles, axes, mortars, pestles, stone tools, bone artifacts, etc. Five graves contained psalia and "battle chariots." Twenty-five graves had evidence for the sacrifice of horses, cattle, sheep, goats, and dogs. The animals or sometimes only parts of them were placed either directly in the burial or in associated pits. From one to six horses were placed in individual graves. The excavators had little doubt that the differences in the wealth placed in particular tombs indicated a rank-ordering of social strata. Significantly, several of the burials containing considerable wealth were of females and children. In some burials the excavators recorded the presence of "altars" and associated "ritual fires."

A circular barrow 32 m in diameter contained three burial clusters. The first group had abundant grave offerings placed in individual chambers containing numerous sacrificed horses. The second group was placed in a central structure 18 m in diameter. Within this burial was uncovered a large battle chariot with a very rich inventory of material remains and numerous sacrificed animals. This entire complex is interpreted as the burial of an extremely important person. A third group of burials consisted mostly of women and children placed in simple shallow pits at the edge of the barrow. These burials also contained rich grave goods and the remains of sacrificed animals.

A small barrow was located 400 m northwest of the large burial complex. It was 12 m in diameter and contained six adults and three children, all placed in a square wooden structure. Burial 7, a male, was particularly rich in material remains, as was burial 10, a female. Both burials contained a rich inventory of metals—the male daggers and knives, the female bracelets and needles.

Both burials contained sacrificial animals. The researchers suggest that this burial complex contained a number of related persons.

Another barrow was 15–16 m in diameter and contained a single wooden chamber with five bodies. A large battle chariot was uncovered, and near each of the deceased was a rich material inventory. Four additional graves were found outside of the structure. Some Russian archaeologists believe that human sacrifice and the defleshing of the dead were components of Andronovo burial ritual, and if so, perhaps these are candidates for such a practice.

Another barrow, looted in antiquity, is 85 m in diameter and is located almost immediately adjacent to the large burial complex. Around the barrow there is evidence for a 12-m-wide moat. Within the barrow there were numerous "ritual fires" surrounding two wooden structures and a large wooden "temple" structure. The principal burial was placed in a vaulted dromos. Over the looted burial chambers an impressive "temple" had been constructed.

In the opinion of Zdanovich and Zdanovich (1995; Zdanovich 1997), the Sintashta-Arkhaim-Petrovka culture is characterized by heavily fortified communities with moats and walls forming circular or subrectangular settlements. Gennadi Zdanovich (1995, 1997, 1999), who excavated both Sintashta and Arkhaim, refers to this culture as the "country of towns." Nineteen settlements of this type, spaced about 20–30 km apart, are known in an area 450 km by 150 km.

The horse-drawn chariot, a rich inventory of weaponry, tin-bronze alloying, and disclike bone psalia are all believed to be innovations of the Sintashta-Arkhaim-Petrovka culture. The Andronovo culture has also been seen as responsible for large-scale metallurgy and as the principal agent in the exchange of metals throughout Eurasia in the 2d millennium. The recent discovery of stannite deposits and tin mining at Muschiston, Tadjikistan, associated with Andronovo sherds (Aklimov et al. 1998), adds to the already considerable evidence for the mining of copper deposits by the Andronovo tribes (Cherynkh 1994*a*, *b*). Given the existence of an extensive Andronovo metallurgical inventory, its association with the mining of both copper and tin, the evidence for the production of metal artifacts at numerous sites, and the presumed extensive migrations, the Andronovo culture is often considered responsible for the dissemination of metallurgical technology. Some writers have even suggested that the pastoral nomads of the steppes—the Andronovo and the even earlier Afanasiev cultures—were the agents of the dissemination of metallurgical technology into China (Peng 1998, Bunker 1998, Mei and Shell 1998).

The search for new metal resources, the alloying of copper with tin, intensive cattle breeding, the construction of fortified settlements, and the development of the horse-driven chariot are all important innovations of the "country of towns." Less attention has been paid to plant remains. At Arkhaim archaeologists recovered millet (*Panicum miliaceum*) and Turkestan barley (*Hordeum*

turkestan). The excavator has also argued for the presence of "irrigated farming" in "kitchen gardens," parallel beds 3–4 m wide divided by deep ditches (Zdanovich 1999*a*; 1999*b*:380).

Arkhaim is a circular fortified settlement approximately 150 m in diameter. It is estimated that between 1,000 and 2,000 people inhabited it. The settlement is surrounded by two concentric defensive walls constructed of adobe and clay placed in a log frame. Within the circle, abutting the defensive walls, are some 60 semisubterranean dwellings. These houses contain hearths, cellars, and wells, and some have metallurgical furnaces. A drainage gutter with pits for collecting water was uncovered in the circular street that surrounded the inner portion of the settlement. In the center of the settlement was a rectangular "plaza."

Entrance into the settlement was by way of four elaborately constructed angular passages constructed over moats and terminating in a gate. Clearly, access for the unfamiliar would have been very difficult. Larger fortified settlements with far more impressive stone architecture are known but remain unexcavated. Russian archaeologists believe that the Sintashta-Arkhaim-Petrovka culture consisted of three classes, military and religious leaders, nobles, and peasants, and they tend to refer to this culture as a chiefdom rather than as a military democracy (Koryakova 1996).

The discovery and preservation of Arkhaim is of special significance, as it was scheduled to be flooded in 1989 after the completion of a reservoir. In 1991 the Council of Ministers of the Russian Federation designated Arkhaim and its environs a protected site. In subsequent years a scientific campus was built, along with tourist facilities, and in 1999 an impressive Museum of Natural History and Man was under construction. Arkhaim has become a center for followers of the occult and Russian supernationalists, a theater of, and for, the absurd and dangerous. It is argued that it was constructed to reproduce a model of the universe; that it was built by King Yima, as described in the Avesta, the sacred book of the Zoroastrians (Medvedev 1999); that it was a temple observatory; that it was the birthplace of Zoroaster, who is buried at Sintashta; that it is the homeland of the ancient Aryans; and that it is the earliest Slavic state. The swastika, which appears on pottery from Arkhaim, is proclaimed a symbol of Aryanism. Visitors come to pray, tap energy from outer space, worship fire, be cured, dance, meditate, and sing. "We Slavs," writes Zdanovich, the director of excavations, "consider ourselves to be new arrivals, but that is untrue. Indo-Europeans and Indo-Iranians had been living here [in the southern Urals] since the Stone Age and had been incorporated into the Kazakhs, Bashkirs, and Slavs; such is the common thread linking us all" (quoted in Shnirelman 1998, 1999).

Shnirelman (1995:1) writes that nationalist concerns in the former U.S.S.R. are creating "an explicitly ethnocentric vision of the past, a glorification of the great ancestors of the given people, who are treated as if they had made the most valuable contribution to the culture of all humanity." The wave of nationalism in Russia has given rise to numerous publications of highly dubious merit. Thus, a monograph published by the Library of Ethnography and sanctioned by the Russian Academy of Science, *Kto Oni i Otkuda* (Chesko 1998), claims the Arctic to be the original homeland of the Vedas and Russian the language with the closest affinity to Sanskrit. This heightened nationalism projects a mythical and majestic Slavic past in which the archaeology of Arkhaim plays no small part. Geary, discussing ethnic group formation (1999:109, my emphasis), states:

> The second model of ethnogenesis drew on Central Asian steppe peoples for the charismatic leadership and organization necessary to create a people from a diverse following. . . . *these polyethnic confederations were if anything more inclusive* than the first model [in which ethnic formation followed the identity of a leading or royal family], *being able to draw together groups which maintained much of their traditional linguistic, cultural, and even political organization* under the generalship of a small body of steppe commanders. The economic bases of these confederations was semi-nomadic rather than sedentary. Territory and distance played little role in defining their boundaries, although elements of the confederation might practice traditional forms of agriculture and social organization quite different from those of the steppe leadership.

In a similar vein one might imagine the Andronovo culture as consisting of "polyethnic confederations" which had varying archaeological expressions—Alakul, Petrov, Abashevo, "the country of towns," etc.—each maintaining its "traditional linguistic, cultural, and even political organization." The identification of the Andronovo culture as a singularity, in both a cultural and a linguistic sense, transforms the multiple and the complex into the singular and simple. In considering the history of the peoples of the steppes, whether it be the confederation of the Huns, the Goths, or the Sarmatians, Patrick Geary is at constant pains to point out that "polyethnicity was obvious" and that "ethnic labels remained significant . . . but they designated multiple and at times even contradictory aspects of social and political identity" (1999:117, 125). As Barth (1969) long ago pointed out, ethnic groups are subjective, constructed, and situational, embedded in political and economic relations. Ethnicity is a changing phenomenon that attains its greatest expression in situations of conflict, competition, and cultural change (Jones 1997).

The Bactrian Margiana Archaeological Complex

A major contender for Indo-Iranian identity and a relatively new actor on the archaeological stage of Central Asia is the Bactrian Margiana archaeological complex, discovered and named by Victor Sarianidi (1976:71) through excavations in Afghanistan in the late 1970s (for

references see Klochkov 1999). "Bactria" was the name given by the Greeks to northern Afghanistan, the territory around the Amu Darya River, while Margiana (Margush) was a Persian province of the Achaemenid empire whose capital was Merv, in present-day Turkmenistan. Sarianidi (1998*a*, *b*) not only identified the Bactrian Margiana complex as Indo-Iranian but isolated what he believed to be distinctive Proto-Zoroastrian cultural characteristics in the archaeological record.

Following five years of surveys and excavation at the important site of Delbarjin (Kushan/Buddhist) in Afghanistan, a new publication was initiated specifically to report on this work: *Drevnii Baktria*. In the first volume Sarianidi (1976) published his excavations in the Dashly Oasis, with the initial identification of the Bactrian Margiana complex. In the following year (1977) he published the first extensive synthesis of his work in Afghanistan. His excavations at Dashly III uncovered a round building interpreted as a temple. The Dashly III culture was reconstructed along Mesopotamian lines; a temple community presided over by a "chief priest" eventually gave way to kingship as the communal sector became privatized. The large round building, which had a buttressed outer wall, was the focus of the community, with radial streets leading to it. This "temple," with dozens of rooms indicating domestic functions, was believed to have housed 150–200 people. Numerous bronze compartmented seals were recovered but no sealings. The seals were attributed the same function as in Mesopotamia—securing doors and stored and transported goods.

Sarianidi concluded that the Dashly III settlements were self-sufficient communities managed as temple estates. He specifically drew a parallel between them and the Uruk community of Mesopotamia and suggested that a few elements found ready parallels in the Rigveda and the Avesta: cattle breeding, fire temples, circular and rectangular fortresses, animal burials, and the presence of camel (Sarianidi 1984).

Excavations at the Dashly Oasis, Togolok 21, Gonur, Kelleli, Sapelli, and Djarkutan have provided extraordinarily rich documentation of material remains and architectural exposures, as well as a chronological sequence for the Bactrian Margiana complex (for a review see Askarov and Shirinov 1993). The very extensive horizontal exposure at each of these sites—a signature of Soviet archaeology—is almost as impressive as the monumental structures discovered in them, all identified as either temples, forts, or palaces. Sarianidi (1990, 1998*b*) states that Gonur was the "capital" of the complex in Margiana throughout the Bronze Age. The palace of North Gonur measures 150 m by 140 m, the temple at Togolok 140 m by 100 m, the fort at Kelleli 3 125 m by 125 m, and the house of a local ruler at Adji Kui 25 m by 25 m. Each of these formidable structures has been extensively excavated. While they all have impressive fortification walls, gates, and buttresses, it is not always clear why one structure is identified as a temple and another as a palace. Nor is there a clear signature or architectural template within the complex; in fact, each

building is unique, save for the fact that all are fortified by impressive walls and gates. The majority of the objects recovered are ascribed simply to a major feature (e.g., "the palace at North Gonur"). However, when a complex feature such as the so-called priestess burial at Togolok 1, where two bulls and a driver may have been sacrificed, is excavated, a full contextual analysis is provided.

Sarianidi (1990) advocates a late-2d-millennium chronology for the Bactrian Margiana complex, describes it as the result of a migration from southeastern Iran, and identifies it as Indo-Iranian, with objects, beliefs, and rituals ancestral to Zoroastrianism. An impressive series of specific parallels in pottery, seals, stone bowls, and metal types is found with sites in Baluchistan and with Tepe Yahya, Shahdad, and the Jhukar culture of late Harappan times. There is absolutely no doubt, as is amply documented by Pierre Amiet (1984), of the existence of Bactrian Margiana material remains at Susa, Shahdad, and Tepe Yahya, but there is every reason to doubt that these parallels indicate that the complex originated in southeastern Iran. The limited materials of this complex are intrusive in each of the sites on the Iranian Plateau as they are in sites of the Arabian peninsula (Potts 1994).

Although ceramics from the Andronovo cultures of the steppe have been found at Togolok 1 and 21, Kelleli, Taip, Gonur, and Takhirbai, Sarianidi (1998*b*:42; 1990:63) is adamant in opposing any significant Andronovo influence on the Bactrian Margiana complex: "Pottery of the Andronovo type does not exceed 100 fragments in all of southern Turkmenistan." As rigorous approaches to data retrieval were not practiced, this figure must be merely impressionistic. Kuzmina and Lapin (1984) suggest that drought dried up of the delta of the Murghab River, making possible an incursion from the steppes by Andronovo warrior tribes that put an end to the Bactrian Margiana complex. By the middle of the 2d millennium all its sites had been abandoned, for reasons that remain elusive.

The question of the nature and the extent of interaction between the Andronovo cultures of the steppe and the sedentary farmers of Bactria and Margiana is of fundamental importance. As noted, the two archaeological entities are distinctive in their material culture and synchronous, and both have been identified as Indo-Iranian. Decades ago, in his excavations at Takhirbai 3, V. M. Masson (1959) suggested that during the first half of the 2d millennium there was a high degree of interaction between the steppe nomads and the sedentary farmers of Bactria and Margiana. This has been resoundingly confirmed by the highly productive archaeological surveys undertaken recently by the Turkmen-Russian-Italian surveys in Margiana (Gubaev, Koshelenko, and Tosi 1998). Erdosy (1998:143) has recently observed that "the greatest desideratum is a clearer understanding of spatial relationships, the one area of archaeological research that has been seriously neglected by Soviet scholarship."

Archaeological surveys in the Murghab area have documented hundreds of settlements with Bactrian Margiana complex, post–Bactrian Margiana complex, and incised coarse ware (a generic Andronovo ceramic), and

therefore there is little doubt that the interaction of peoples from the steppes with their sedentary Central Asian neighbors was both extensive and intensive, if not always peaceful. Sarianidi (1999) acknowledges this interaction and now argues that Andronovo-type vessels have been found only in rooms used for the preparation of haoma-type drinks in Margiana. He concludes that the Bactrian Margiana complex is Indo-Aryan and the Andronovo Iranian but that as Proto-Zoroastrians the two have cultic rituals in common.

Clearly, the surveys in the Murghab region indicate that it was what Mary Louise Pratt (1992:6–7) calls a contact zone—"the space in which peoples geographically and historically separated come into contact with each other and establish on-going relations, usually involving conditions of coercion, radical inequality, and intractable conflict" and characterized by "radically asymmetrical relations of power." While the relationship between people from the steppes and those of the Bactrian Margiana complex and its successors remains undefined, the fact that all fortified their settlements is suggestive. The surveys highlight that archaeological cultures, no less than modern ones, are not distinct "cultures" or "ethnic groups," what Geertz (2000:234) calls "lumps of sameness marked out by limits of consensus," but permeable mosaics of interacting similarities and differences.

Evidence for the interaction of settled farmers and the Andronovo culture also comes from the excavations in southern Tadjikistan at Kangurttut (Vinogradova 1994), where Andronovo ceramics were recovered. Vinogradova suggests that "infiltration of the Andronovo tribes to the south was relatively slow" and peaceful, allowing a "settling down and dissolution" of the steppe population into that of the farming oases (Vinogradova 1994:46).

The extensive metallurgy of both the steppe cultures and the Bactrian Margiana complex is well documented (Chernykh 1992). The types that characterize the two are entirely distinctive. From her study of the Bactrian Margiana metals N. N. Terekhova concludes that techniques of casting and forging were utilized in the production of objects manufactured from copper-arsenides, native copper, and, very rarely, copper-tin bronze. In the latter category 26 objects were analyzed and proved to contain from 1 to 10% tin.

N. R. Meyer-Melikyan (1998) has analyzed floral remains recovered from the monumental complex at Togolok 21: "fragments of stems, often with leaves, pollen grains, anterophors, microsporangia, and scraps of megasporia skin and parts of fruit" (p. 203) found in large pithoi in rooms 23 and 34. She concludes that the remains belong to the genus *Ephedra*. Sarianidi is thus afforded the opportunity of following a number of scholars who believe that ephedra was the essential ingredient in haoma or soma, the mildly intoxicating drink referred to in the sacred books of the Indo-Iranians, the Rigveda and the Avesta. The presence of ephedra at Gonur is taken by Sarianidi as further testimony to the Indo-Iranian and Proto-Zoroastrian identity of the Bactrian Margiana complex, along with the presence of fire temples,

fire altars (which he compares to *pavi*, Zoroastrian altars), and particular mortuary rituals (animal sacrifice).

Sarianidi (1998*b*) now accepts, albeit with misgivings, the higher chronology for the Bactrian Margiana complex advanced in the mid-1980s by a number of scholars. A series of radiocarbon dates collected by Fredrik Hiebert (1994) at Gonur offers unequivocal evidence for the dating of the complex to the last century of the 3d millennium and the first quarter of the 2d millennium. A new series of radiocarbon dates from Tepe Yahya IVB-4, where Bactrian Margiana imports were recovered, confirms the late-3d-millennium dating for the beginnings of the complex (Lamberg-Karlovsky 2000). Sarianidi (1999:78) writes, "The first colonists from the west appeared in Bactria and Margiana at the transition from the 3d to the 2d millennium B.C." However, his insistence upon dating Gonur to 1500–1200 B.C. flies in the face of his own C^{14} dates, which average 300–500 years earlier.

Of equal significance is Sarianidi's new perspective on the origins of the Bactrian Margiana complex. At numerous sites Sarianidi identifies altars, fire temples, the importance of fire in mortuary rituals, fractional burials, burials in vessels, and cremation, and in chamber 92 at Gonur a *dakhma*—a communal burial structure associated with Zoroastrian mortuary practice, in which the dead are exposed—is reported. Animal burials including camel and ram were recovered from Gonur and other Bactrian Margiana sites. At North Gonur the "Tomb of the Lamb" contained a decorated metal macehead, silver and bronze pins with elaborately decorated heads, an ornamental ivory disc, and numerous "faience" and bone pieces of inlay. Sarianidi interprets this as evidence for the transition from human to animal sacrifice, even though there is no unequivocal evidence for human sacrifice either on the steppes or in Central Asia. Mortuary rituals, architectural parallels (particularly in what Sarianidi calls "temples"), and above all, stylistic similarities in cylinder seals all converge to suggest to him that Bactria and Margiana were colonized by immigrants from the Syro-Anatolian region (1998*a*:76, 142). He traces this migration in two directions: (1) across the Zagros to Elam and Susa, where there are numerous Bactrian Margiana parallels (Amiet 1984), from there to Shahdad and Yahya, where again such materials are found (Hiebert and Lamberg-Karlovsky 1992), and finally to Baluchistan and (2) north of Lake Urmia and along the Elburz Mountains to Hissar in period IIIB and finally to the oases of Bactria and Margiana. Unfortunately, there is scant evidence to support the notion of an extensive migration from Syro-Anatolia to Bactria and Margiana in the archaeological record.

Architectural similarities are exceedingly generalized, and the parallels to time/space systematics are weak. Thus it is suggested that a text from Qumran referring to animal sacrifice, the "Tomb of the Lamb" at Gonur, and a "Ligabue vessel" said to have come from an illegal excavation at Shahdad that is vaguely associated with the Aegean "prove the real historical link of the tribes that immigrated from the west with the Mycenean-Minoan world" to Bactria and Margiana (Sarianidi 1998*a*:

44). Sarianidi believes that the evidence provided by the seals is conclusive—that they derive their thematic inspiration and style from the Syro-Anatolian region and that their motifs and composition are of "undisputed Hittite-Mitannian origin" (1998a:143). One gets the impression that he has chosen the Syro-Anatolian region as the homeland of the Bactrian Margiana complex in order to situate it within the geographical region in which the first Indo-Aryan texts were recovered and thus strengthen his Indo-Aryan claim for it (Sarianidi 1999).

In a treaty between a Hittite and a Mitanni king from the 15th century B.C., the latter swears an oath by a series of gods who are major Indic deities: Mi-it-ra (Indic Mitra), Aru-na (Varuna), In-da-ra (Indra), and Na-sa-at-tiya. In another text a man named Kikkuli counts from one to nine in Indic numerals and is referred to as an *assussanni* (Sanskrit *asvasani-*), a trainer of horses and specialist in chariotry. In yet another text, Indo-Aryan words are used to describe the colors of horses. Finally, the Mitanni word *marya* is precisely the same word as the *marya* referred to in the Rigveda with the meaning "warrior". This evidence has led to the consensus view that an Indo-Aryan-speaking elite of chariot warriors imposed themselves on a native Hurrian population to form a ruling dynasty that endured for several centuries (Mallory 1989). (Ghirshman [1977] attempted to identify the arrival of the Indo-Aryans in the region of the Hurrians (northern Syria) by linking them with Habur Ware and black and grey wares, but this untenable argument was elegantly refuted by Kramer [1977].) These texts indicate that by the 16th/15th centuries B.C. a separate Indo-Aryan language had already diverged from a putative Indo-Iranian linguistic entity. Thus, the split of the Indo-Iranian languages into Iranian and Indo-Aryan must predate the 14th and 15th centuries B.C., perhaps by as much as 500 years, and this is where linguists generally place it.

The vast majority of the Bactrian Margiana seals contain motifs, styles, and even material that are entirely foreign to the repertoire of seals from Syro-Anatolia, Mesopotamia, the Gulf, and the Indus (Baghestani 1997). They are of a thoroughly distinctive type and are to be seen as indigenous to the Central Asian Bronze Age world and not as derivative from any other region. They have been found in the Indus civilization, on the Iranian Plateau, at Susa, and in the Gulf. Amiet (1984) and Potts (1994) have documented the wide distribution of Bactrian Margiana–complex materials, and it is in this context that the specific parallels to the Syro-Anatolian region are to be appreciated. The *wide* scatter of a *limited* number of artifacts does not privilege any area as a homeland for the complex. The very limited number of parallels between the Bactrian Margiana complex and Syro-Anatolia signifies the unsurprising fact that, at the end of the 3d and the beginning of the 2d millennium, interregional contacts in the Near East brought people from the Indus to Mesopotamia and from Egypt to the Aegean into contact.

The idea of a distant homeland and an expansive migration to Central Asia is difficult if not impossible to maintain, but the origin of the Bactrian Margiana complex remains a fundamental issue. Although some scholars advance the notion that it has indigenous roots, the fact remains that its material culture is not easily derived from the preceding Namazga IV culture. Its wide distribution, from southeastern Iran to Baluchistan and Afghanistan, suggests that its beginnings might lie in this direction—an area of enormous size and an archaeological *terra nullius*. In fact, the Bactrian Margiana complex of Central Asia may turn out to be its northernmost extension, while its heartland may lie in the vast areas of unexplored Baluchistan and Afghanistan.

Ahmed Ali Askarov (1977; Askarov and Shirinov 1993) has excavated two important settlements of this complex in Uzbekistan: Sapelli Depe and Djarkutan. The recent syntheses of these excavations (Askarov and Shirinov 1993) offer an abundance of illustrations of the architecture, ceramics, and material remains recovered. The walled settlement of Djarkutan covers an area of approximately 100 ha and features a fortress, almost completely excavated, of more than 3 ha. The architecture and material inventory firmly place Djarkutan and Sapelli Depe within the Bactrian Margiana cultural context. Askarov, following Sarianidi, places Djarkutan in the second half of the 2d millennium B.C. and describes palaces, temples, and fire altars as related to a Proto-Zoroastrian world.

Askarov pays special attention to a large structure at Djarkutan, over 50 by 35 m, identified as a "fire temple." This structure contains extensive storage facilities and a large paved central room with a raised podium in its center that is believed to be the seat of the "sacred fire," as well as other rooms containing "fire altars." This impressive building is explicitly described as Proto-Zoroastrian. At both Djarkutan and Sapelli Depe, extensive excavation has uncovered dozens of structures and numerous graves, but because there is little attribution of materials to specific rooms and/or structures one can only summon a vague notion as to how many building levels there are at a single site. My own visits to Gonur, Togolok, and Djarkutan confirm that each of these sites has multiple building levels, but the publications present the data as being essentially from a single time period. Even though Sarianidi points out that Gonur had 2 m of accumulation and Taip 2.5 m, the stratigraphic complexity and/or periodization of these sites is left unexplored. Thus, the internal development and chronology of the complex still await definition. Askarov reconstructs social stratification at Djarkutan, from aristocrats to slaves, within a state-structured society. He identifies both sites as inhabited by Indo-Iranian tribes which, he believes, played an important role in the later formation of Uzbek, Tadjik, and Turkmen nationalities.

The settlement pattern around Djarkutan and Sapelli mirrors that of the sites excavated by Sarianidi. A large settlement with impressive "temples" and/or "palaces" is surrounded by smaller agricultural villages. After Sapelli was abandoned for reasons unknown, the site, particularly the region about the "temple," was used as a cemetery. A total of 138 graves were excavated. Raffaele Biscione and L. Bondioli (1988) report that females out-

numbered males by three to two. While both male and female graves contained numerous ceramics, metals, and stone vessels, females were accompanied by an average of 15.5 objects and males by 7.5. Two male graves, however, stand out from all the rest in number of objects and in placing the dead in wooden coffins.

Striking evidence for interaction between the Bactrian Margiana complex and the steppe cultures is reported from the salvage excavation of an elite tomb discovered along the upper Zerafshan River in Tadjikistan (Bobomulloev 1999). Excavation of this tomb yielded the burial of a single male, accompanied by a ram, psalia identical to those recovered from Sintashta, a bronze pin terminating with a horse figurine, and numerous ceramics of Bactrian Margiana type. This striking association in a single tomb underscores the existence of a paradox. On the steppes there is ample evidence for the use of horses, wagons, and chariots but an *exceedingly* scant presence of Bactrian Margiana material remains, while in Bactrian Margiana communities there is scant evidence for steppe ceramics and a complete absence of horses and their equipment or their depiction. Such an asymmetry in the distribution of these highly distinctive cultures would seem to suggest a minimum of contact between the two. The fact that representative communities of both cultures (e.g., Arkhaim and Gonur) are heavily fortified suggests the need of each community to prepare for conflict. The extent of the conflict that existed *within* these distinctive cultures as well as *between* them remains unknown.

The almost complete absence of evidence of contact between the Bactrian Margiana complex and the cultures of the steppe is made the more enigmatic by the evidence of settlement surveys. Gubaev, Koshelenko, and Tosi (1998) have found numerous sites of the steppe cultures near Bactrian Margiana settlements. The evidence therefore suggests intentional avoidance. Clearly this situation, should it be correctly interpreted, requires theoretical insights that await elucidation.

Iron Age Settlements in China

In the 2d century B.C., Zhang Qian, a Chinese envoy stationed in the western provinces, compared the agrarian and nomadic polities of Xinjiang, and Nicola DiCosmo (2000) finds those Iron Age settlements similar to the Bactrian Margiana complex sites with respect to size, fortifications, oasis environments, subsistence patterns, and processes of nomadic-sedentary interaction. Zhang Qian wrote of 24 "walled towns" in Xinjiang that served as "capitals," and DiCosmo calls these nomadic settlements "city-states." Wutanzli consisted of 41 households containing 231 individuals, of whom 57 were capable of bearing arms; Yanqi was among the most populous, with 4,000 households containing 32,100 individuals and an army of 6,000. Chinese sources identify these political entities as *guo*, traditionally rendered in England as "state." Each *guo* was a political formation with a recognizable head, a bureaucratic hierarchy, and a mil-

itary organization. The Chinese texts indicate that the pastoral nomads maintained a larger military-to-civilian ratio than their agrarian neighbors.

The scale of the pastoral nomadic "empire" in the late Iron Age is attested by the Wusun of Xinjiang's Tarim Basin, with a population of 630,000 and an army of 188,800 (DiCosmo 2000:398). To the Wusun can be added the pastoral-nomadic Saka, Yuezhi, and Xiongnu and the later Mongol confederations, each of which affected the political organization of Eurasia on a continental scale. Relationships between nomadic and sedentary communities were typically hostile; the Chinese sources suggest that insufficient food supplies resulted in competition and conflict over agricultural resources. When nomadic polities were strong, they extracted tribute from their more sedentary neighbors, thus ensuring the need for an extensive military presence in return for a sufficient and regular food supply (see also Jettmar 1997). It is entirely possible that in the Bronze Age the sedentary Bactrian Margiana complex and the pastoral-nomadic Andronovo cultures formed an "ideal type" (in the Weberian sense) of sociopolitical foundation that is mirrored in these later Chinese texts.

Archaeological and Linguistic Correlations

The archaeologist A. L. Netchitailo (1996) refers to all the archaeological cultures on the steppes as belonging to what he calls "the European community." This view can be interpreted as inclusive, in which case Altaic- and Ugrian-speakers become European, or exclusive, in which case they played no role on the steppes. I argue for a different interpretation entirely—that the bearers of any of the variants of the Andronovo culture and the Bactrian Margiana complex *may* have spoken Indo-Iranian but may just as readily have spoken a Dravidian and/or an Altaic language. Contemporary methodologies, linguistic or archaeological, for determining the spoken language of a remote archaeological culture are virtually nonexistent. Simplified notions of the congruence between an archaeological culture, an ethnic group, and a linguistic affiliation millennia before the existence of texts is mere speculation, often with a political agenda. Archaeology has a long way to go before its methodology allows one to establish which cultural markers, pottery, architecture, burials, etc., are the most reliable for designating ethnic identity.

Some scholars, both linguists and archaeologists, subscribe to the notion that the Dravidians migrated from the Iranian highlands to South Asia, where they came into contact with the Indus civilization (Witzel n.d.); others even suggest that the horse and the camel were introduced into Iran by the Dravidians (Allchin 1995:31; Kenoyer 1998:78). The Bactrian Margiana complex *could* have been Indo-Iranian, Dravidian, Altaic, or any combination of the three. If, say, it was Dravidian, then which archaeological culture represents the others? Central Asia has either too many languages and too few archaeological cultures or too few languages and too many

archaeological cultures to permit an easy fit between archaeology and language.

Archaeologists and linguists share a difficulty in confronting and identifying processes of convergence and divergence. Migrations result in linguistic and cultural divergence, giving rise to the family-tree model of language formation, while seriation, the establishment of a "genetic" relationship between two objects in distinctive material cultures, indicates cultural divergence in the archaeological record. Convergence—the coming together of two distinctive languages and/or cultures—is a more recent linguistic concern that is completely ignored in archaeology. Archaeological cultures either progress, change because of internal social processes (rarely demonstrated), or, more typically, are altered by external factors (population pressure, climate change, migration/diffusion, etc.). The Australian linguist R. M. W. Dixon (1997) has given new life to the importance of linguistic convergence, first advocated by Trubetskoy (1968 [1939]). Dixon (1997:3) convincingly argues that migrations, which trigger linguistic (and cultural) divergence, are rare, the more normal situation being linguistic, and I daresay cultural, convergence:

> Over most of human history there has been an equilibrium situation. In a given geographical area there would have been a number of political groups, of similar size and organisation, with no one group having undue prestige over the others. Each would have spoken its own language or dialect. They would have constituted a long-term linguistic area, with the languages existing in a state of relative equilibrium.

This would seem to describe the archaeological cultures of the steppes from the Pit Grave to the Andronovo culture(s). Given the increasingly large number of divisions and subdivisions of the generic Andronovo culture(s), with evidence for no one group's having "undue prestige over the others," there is no reason to believe that they all shared an Indo-Iranian language. From the millennia-deep common roots of the Andronovo culture(s) and before that the related Timber Grave culture(s), processes of both convergence and divergence (archaeologically indicated by the eastward migrations of the Andronovo culture[s]) allow for the presence of not only Indo-Iranian but other language families as well.

Clearly, the idea of the convergence of cultures, that is, the assimilation of local populations by incoming peoples, is very poorly developed in archaeology. The problem of identifying convergence in an archaeological or linguistic framework is highlighted by Henning's (1978) attempt to identify the Guti as the "first Indo-Europeans." At ca. 2200 B.C. the Guti invaded Mesopotamia and brought down the powerful Akkadian empire. They are identified in the texts as mountain people, probably from northwestern Iran, who ruled Mesopotamia for approximately 100 years. Archaeologists have been unable to identify a single fragment of material culture in Mesopotamia as belonging to the Guti, and the Akkadian (western Semitic) texts contain no loanwords identifiable as Indo-European. Except for their name and their activities as recorded in the Mesopotamian texts, the Guti are all but invisible. Henning (see also Narain 1987) suggests that after their conquest of Mesopotamia they migrated to the east, where Chinese texts refer to them, as the Yuë-chih (the phonological equivalent of "Guti" in Chinese). In the first half of the 2d millennium there is not a shred of archaeological evidence for a migration from Mesopotamia to China, nor is there a parallel in the realm of the Yuë-chih for a Mesopotamian-Gutian material culture. This does not negate the Guti (Yuë-chih) identity but merely underscores the fact that convergence can virtually obliterate the ability to distinguish previously distinctive entities, whether cultural or linguistic.

Conclusions

Russian scholars working in the Eurasiatic steppes are nearly unanimous in their belief that the Andronovo culture and its variant expressions are Indo-Iranian. Similarly, Russian and Central Asian scholars working on the Bactrian Margiana complex share the conviction that it is Indo-Iranian. The two cultures are contemporary but very different. Passages from the Avesta and the Rigveda are quoted by various researchers to support the Indo-Iranian identity of both, but these passages are sufficiently general as to permit the Plains Indians an Indo-Iranian identity. Ethnicity is permeable and multidimensional, and the "ethnic indicators" employed by Kuzmina can be used to identify the Arab, the Turk, and the Iranian, three completely distinctive ethnic and linguistic groups. Ethnicity and language are not so easily linked with an archaeological signature.

Furthermore, archaeology offers virtually no evidence for Bactrian Margiana influence on the steppe and only scant evidence for an Andronovo presence in the Bactrian Margiana area. There is certainly no evidence to support the notion that the two had a common ancestor. There is simply no compelling *archaeological* evidence for (or, for that matter, against) the notion that either is Indo-Iranian.

Indo-Iranian is a linguistic construct with two branches, one of which went to Iran and the other to northern India. The time of their arrival in these new homelands is typically taken to be the 2d millennium B.C. Not a single artifact of Andronovo type has been identified in Iran or in northern India, but there is ample evidence for the presence of Bactrian Margiana materials on the Iranian Plateau and in Baluchistan (e.g., at Susa, Shahdad, Yahya, Khurab, Sibri, Miri Qalat, Deh Morasi Ghundai, Noushara [for a review see Hiebert and Lamberg-Karlovky 1992]). It is impossible, however, to trace the continuity of these materials into the 1st millennium and relate them to the known cultures of Iranian-speakers—the Medes or the Achaemenids (or their presumed Iron Age ancestors [see Ghirshman 1977, Young 1967]). The only intrusive archaeological culture of the 2d mil-

lennium that directly influences Iran and northern India is the Bactrian Margiana archaeological complex, but it cannot be linked to the development of later 2d- and 1st-millennium archaeological cultures on the Iranian Plateau.

The identity of the Indo-Iranians remains elusive. When they are identified in the archaeological record it is by allegation rather than demonstration. It is interesting that the archaeological (and linguistic) literature has focused entirely upon the Indo-Iranians, overlooking the other major linguistic families believed to have been inhabiting the same regions—the Altaic, the Ugric, and the Dravidian. Each of these has roots in the Eurasiatic steppes or Central Asia. The fact that these language families are of far less interest to the archaeologist may have a great deal to do with the fact that it is primarily speakers of Indo-European in search of their own roots who have addressed this problem.

In an interesting "Afterword" to Sarianidi's *Margiana and Protozoroastrianism*, J. P. Mallory asks, "How do we reconcile deriving the Indo-Iranians from two regions [the steppes and the Central Asian oases] so different with respect to environment, subsistence and cultural behavior?" (1998a:181). He offers three models, each of interest, none supported by archaeological evidence, one of which is that the Bactrian Margiana complex was Indo-Iranian and came to dominate the steppe lands, serving as the inspiration for the emergence of fortified settlements such as Sintashta in the southern Urals. Thus, an external source is provided for the development of the "country of towns" and with it a linguistic affiliation. Mallory admits that this model is unlikely. His conclusion is that the nucleus of Indo-Iranian linguistic developments formed in the steppes and, through some form of symbiosis in Bactria-Margiana, pushed southward to form the ancient languages of Iran and India (p. 184). It is, however, that "form of symbiosis" that is so utterly elusive!

Linguists too often assign languages to archaeological cultures, while archaeologists are often too quick to assign their sherds a language. Denis Sinor (1999:396), a distinguished linguist and historian of Central Asia, takes a position that more might consider: "I find it impossible to attribute with any degree of certainty any given language to any given prehistoric civilization." The works I have mentioned in this piece offer archaeological data of great interest and importance, and all their authors identify the archaeological cultures with which they are working as Indo-Iranian. Linguists cannot associate an archaeological culture with words, syntax, and grammar, and archaeologists cannot make their sherds utter words. We need a third arbiter, which may or may not offer some degree of resolution to the relationships between archaeological culture and language. Perhaps that arbiter will be in our genes. To date only a few mitochondrial and Y-chromosome studies of Eurasian populations have been undertaken (Voevoda et al. 2000). Eliza Khusnutdinova and her team at the Uta Research Center are conducting pioneering DNA studies in the Volga-Urals region of Russia. In the context of a renewed fashion of relating archaeology, culture, and language it is well to remember that neither sherds nor genes are destined to speak specific languages, nor does a given language require a specific ceramic type or genetic structure.

Comments

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Central Asian/steppe archaeology needs ambitious, large-scale studies like this one, but inevitably such summaries contain inaccuracies, which I cannot address in detail. I will address only four broad issues.

1. The indigenist claim for a local evolution of the Sintashta-Arkaim complex east of the Urals is supported by virtually no archaeological evidence. Sintashta-Arkaim developed around 2100/2000 cal B.C. out of the Late Middle Bronze Age cultures of the Don-Volga region—Late Poltavka, Abashevo, and Potapovka—and was clearly intrusive east of the Urals. It established new economic, ritual, and typological patterns in the northern steppes that were inherited and elaborated in the Andronovo and Timber Grave horizons; together these created one cultural horizon from the Carpathians to the Tien Shan. The earliest dates for Timber Grave and Andronovo are about 1900/1800 cal B.C. Petrovka is earliest Andronovo and later than Sintashta-Arkaim, stratified above Sintashta deposits at Ust'e and Krivoe Ozero.

2. The Andronovo horizon is not as weakly defined as Lamberg-Karlovsky says. Andronovo displays similar graves, bronze weapons and tools, ornaments, house types, and settlement types. Andronovo communities shared decorative motifs, aesthetics, and broadly similar agro-pastoral economies. Two major variants quickly emerged: a more conservative Alakul (northern steppes) and an innovating Federovo (eastern Kazakhstan); Federovo may well reflect the adoption of Andronovo customs by various local ethnic groups. But the spread of Indo-Iranian languages did not require the spread of a single ethnic group. Like the Scythian-Saka horizon of a later era, the Andronovo horizon was almost certainly polyethnic but still could represent a single set of related Indo-Iranian dialects. The recitation of hymns at public sacrificial feasts described in the Rigveda was probably the medium through which Indo-Iranian dialects were linked to the spread of the Andronovo mortuary ritual complex.

3. There are many similarities between Sintashta or Andronovo customs and those of the Avesta and the Rigveda. The Vedic and Avestan people were pastoralists—milk and butter were the symbols of prosperity and, with cattle and horses, the proper offerings to the gods. They used chariots and celebrated war. Their only im-

portant female deity was Dawn. The Andronovo people had an agro-pastoral economy, used chariots, and regularly buried their young men with status weapons. The mortuary ceremonies described in the Rigveda included both cremation (as in Federovo) and kurgan graves (typical of Andronovo). One hymn (Rigveda 10.18) describes a covered burial chamber with posts holding up the roof, walls shored up, and the chamber sealed with clay—a precise description of Sintashta and Andronovo grave pits. In the Rigveda, sacrificed cattle and horses have their limbs carefully cut off and laid out, a custom typical of Andronovo graves. The irrigation farmers of the Bactrian Margiana complex had no horses or chariots, lived in brick-built walled towns (the abode of the enemy Others in the Rigveda), had an important female deity, and did not build kurgan cemeteries or place cattle limbs in their graves. Their connection to the Rigveda and the Avesta is based entirely on supposed "fire temples" and ritual deposits of ephedra—the soma of Vedic rituals. But soma was not known among other Indo-European groups, so Indo-Iranians probably adopted it from an eastern culture. The Indo-Iranian word for the soma plant (*ancu*) was borrowed from a non-Indo-European substrate language along with words for "brick," "plowshare," and "camel" (Lubotsky n.d.). The language of the Bactrian Margiana towns might well have been that substrate. Andronovo people lived on the outskirts of these towns, and Andronovo pots were placed in the temple rooms where soma was used. About 1650–1500 B.C. all of these towns were abandoned, and pastoral economies spread across Iran. A group of chariot warriors appeared among the Mitanni in northern Syria whose personal names and oaths referred to deities and concepts central in the Rigveda and whose language was a dialect of the Sanskrit of the Rigveda. The peculiar gods (Indra), some myths, and dialect of the Rigveda probably developed among a southern Andronovo population during centuries of interaction with the Bactrian Margiana complex prior to the Indic spread across Iran (Mitanni) and Pakistan. Iranian dialects probably entered Iran later.

4. DNA rarely helps to connect archaeology with language. Language boundaries and material culture boundaries coincide under some circumstances, but these ethnolinguistic frontiers are almost never genetic—people marry across them. Material-culture frontiers that persist in one place over many centuries are usually ethnolinguistic. This happens at sharp ecological boundaries, where contrasting subsistence, settlement, and prestige systems generate a cultural frontier that can persist for long periods. Persistent ethnolinguistic frontiers also occur at the edges of regions recently colonized by substantial numbers of long-distance migrants (Brittany/France, England/Wales, French/German Switzerland). The ecological frontier between the river deltas of southern Central Asia/Iran and the deserts and steppes was a persistent cultural-economic boundary between 5000 and 1500 B.C. and therefore probably a linguistic frontier as well. Given their core vocabulary of ecological terms, Indo-European languages had to originate north of this line, but the spread of Indo-Iranian languages southward after 1650–1500 B.C. seems to have resulted in the replacement of the earlier urban tradition with an assortment of pastoral regional groups, not one intrusive culture. The principles that connect language and material culture are complicated and not applicable to every situation. Still, it is by investigating such principles (see, e.g., Cordell 1997, chap. 11), rather than depending on the false hope of DNA, that we will increase our understanding of the archaeology of language.

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This important, closely argued case study adds to the growing literature demonstrating that ethnic identifications (and their linguistic equivalents) are rarely tightly divided and defined and their links with material culture not subject to homologically exact correlations (cf. Jones 1997:119–27). And I am in full agreement with Lamberg-Karlovsky's description of ethnicity as a fluid construct rather than a fixed, primordial reality.

Being unfamiliar with the specific chronological and social context of this paper, I will limit my comments to the broader issues of the production of archaeological pasts in the present, ethnicity and nationalism, and the politics of identity. My feeling is that this study does not go far enough. A critique of archaeology as a device that produces essentialist typologies of community identities with their assumed material-culture isomorphism should not simply question the lack of empirical support of the exercise; it should expose and undermine its ontological, epistemological, and political foundations. The phenomena that Lamberg-Karlovsky critiques are not simply a matter of "nationalist bias" which can be avoided by adopting a presumably neutral, objectified approach. All attempts to tell stories about the past are implicated in the discourse of identity (cf. Friedman 1992); moreover, the construction of (often static and typologically fixed) identities is intrinsic to the foundation of the enterprise of archaeology. Indeed, at least in European contexts, archaeology as an independent discipline owes much to the dominant discourse of identity in modernity that is nationalism. Accordingly, concepts, methodologies, and terminology often carry with them this heritage, despite the recent sophisticated developments in both theory and methodology. Lamberg-Karlovsky's paper does not seem to be immune to this, as his use (albeit with qualifications) of the concept of "archaeological culture" (a key notion of static, primordialist ideas of ethnicity) reveals.

Our critique of essentialist narratives in archaeology should be part of a broader interrogation of the nature of archaeological enquiry, the methodologies and theoretical concepts deployed (including the use of terminology), and the political roles in which archaeological discourses and practices are involved today. I have suggested elsewhere (Hamilakis 1999) that archaeology

should be seen not as the pursuit of the "truth" about the past on the basis of a supposedly preexisting archaeological record but rather as cultural production, dealing with stories and narratives about the past in the present—that is, as discourse (*logos*) on ancient things and as a framework of practices, institutions, and narratives intricately linked to the present. In this sense, archaeologists produce the "archaeological record" out of existing, fragmented traces of the past, a process which is subject to the tensions and dynamics of the present. The interrogation of essentialist narratives on the past such as the invention of fixed ethnic and linguistic groups becomes, therefore, part of the broader interrogation of the genealogy, social history, and political economy of the archaeological enterprise. Furthermore, the narrative strategies deployed in the production of archaeological stories, the emplotment of material traces, events, and processes into a single narrative—in other words, the metahistory of the archaeological enterprise (cf. White 1972)—should be part of this broader project of critique (cf. Pluciennik 1999), a prerequisite for the production of alternative, more open and reflexive archaeologies.

This project cannot proceed by ignoring the political and power dynamics of both the genealogy of essentialist discourses on identity and their present-day implications and effects. Ethnicity and nationalism, despite their semantic differences, are part of the same discourse on identities, and ethnic categories imposed upon the past are often produced by relatively recent national discourses and practices. These power dynamics are often played out in broader global contexts and are linked to present-day power asymmetries. As Lamberg-Karlovsky notes, in this case the selection of "Indo-Iranian" as an ethnic linguistic group (amongst many others) upon which claims are made on behalf of prehistoric social groups is curious and demands explanation. The fact that the producers of this narrative are themselves speakers of Indo-European languages is undoubtedly a relevant factor, but it is important to trace the links (some implied in the text but not explored) of this archaeological production with present-day political dynamics in the region not only in terms of competing nationalisms but also in terms of global negotiations of power, for example, claims to the political, economic, and cultural Western "Indo-European" present.

Does the application of techniques such as DNA analysis provide a solution to these problems, as Lamberg-Karlovsky seems to imply? I doubt it. Ontologically, any claim to the authority of an assumed objective arbitrator is bound to be inadequate unless it examines the "regimes of truth" that have produced that authority (cf. Foucault 1980). Besides, group identities, as Lamberg-Karlovsky himself notes, are fluid and flexible and not always necessarily linked directly to genetic associations (cf. Pluciennik 1996).

Epistemologically, the problems of DNA analysis in archaeology are severe, despite its enormous potential in elucidating certain issues about the past (cf. Brown and Pluciennik 2001). And politically, a discourse which moves the debate on past and present identities onto the

ground of genetics, devoid of social processes, is dangerous and potentially explosive.

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The basic technological vocabulary of the Indo-European languages can in many cases be shown to go back to the Neolithic. Wilhelm Schulze has shown that the Latin words *ficta sive picta forma* are equivalent to the Tocharian *tseke si peke si pat arampat*, meaning "the beauty of a work of art or a painting." The Neolithic String Ware culture tied twisted strings around a soft, newly formed clay vessel, and the impressions of these strings were filled out with white color to produce ornament. The grooved wares that developed from this achieved rather elaborate decoration, as regular impressions were produced with corresponding grooves. Along with this there is also a group of nasal verbs in Latin with similar forms, namely, *fingo, fingere* 'mould from clay', *stringo, stringere* 'tie', *stinguo, stinguere* '[originally] stick or prick', and *pingo, pingere* 'paint'. [1]

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Lamberg-Karlovsky has written an important and timely article critiquing the tendency, particularly—though by no means exclusively—among certain Russian archaeologists, to assign linguistic affiliations and/or ethnic identities to prehistoric peoples whose "cultures" are known to us solely on the basis of material remains. He is cognizant of the historical abuse of archaeology for the purpose of making such questionable identifications. He explicitly notes some contemporary extreme examples in which once again fanciful and dangerous reconstructions of the remote past are made in order to glorify a superrace of Aryans or Indo-Iranians. His criticisms are well-made and pointed, including the observation that such misguided attempts necessarily exclude other peoples (Turks, Finno-Ugrians, etc.) whose distant ancestors also undoubtedly roamed some part of the Eurasian steppes during Bronze Age times. In the current age of subjectivity and relativism, how does one deal with an "alternative reading" of the past that excludes other alternative readings?

Similarly, I find myself in broad agreement with his critique of the dominant linguistic-divergence model (a multibranched tree with its trunk rooted in a mythical homeland) and his suggestion that we concentrate on the fusion of languages rather than on their division. If cultures are never made but always in the making, as many

1. Translated by Lynn E. Roller.

contemporary theorists would argue, then the same is manifestly true for languages, and the search for ultimate origins—cultural or linguistic—is largely illusory. The Bronze Age archaeology of the western Eurasian steppes is striking in the overall uniformity of materials, shared technologies, and burial rites (e.g., pit grave, catacomb grave, timber grave) stretching across vast distances; people were communicating with one another, exchanging metals and occasional exotic luxury goods, and sometimes physically moving from one area to another. It is not surprising that they were able to communicate with each other through some shared *koiné*. Such a shared system of communication does not require a peculiarly gifted people to spread across and dominate this vast interconnected zone.

Many interpretations of the archaeology of the Eurasian steppes suffer from anachronistic reasoning or what might be termed the Genghis Khan syndrome (even though the Great Khan came from the wrong ethnic group!). That is to say, current reconstruction of the subsistence economies on the western steppes during Bronze Age times unequivocally demonstrates that the classic mixed-herd mounted pastoral nomadism that characterized the steppes during historic times and that has been amply documented by ethnographers was not yet in place. Aside from the question as to when horses were first domesticated and ridden, peoples were dominantly herding cattle, not tending flocks of sheep and goats (with an occasional Bactrian camel tossed in). Rather than noble conquering warriors capable of devastating anything in their path, the Bronze Age peoples of the western Eurasian steppes were impoverished cowboys in ponderous ox-drawn carts seeking richer pasture and escape from the severity of the climate, particularly the increasingly harsh winters they experienced as they moved eastwards across the rapidly filling steppe. This story cannot be followed in detail here, but it is relevant to the northern component of the Bactrian Margiana archaeological complex that is discussed by Lamberg-Karlovsky. He has reason to suggest that the "origins" of this complex may ultimately be documented in southern Afghanistan or Pakistani Baluchistan, as opposed, say, to the western origins favored by Sarianidi or the northern origins favored by Kuzmina.

But perhaps this question has been incorrectly posed (and, paradoxically, contradicts Lamberg-Karlovsky's own cogent critique of linguistic and ethnic origin tales). What I mean is that our concept of archaeological cultures or entities that are larger than cultures but somehow related (like the Bactrian Margiana complex) must be flexible and reflect complex reality and constant change. Archaeological cultures should not be viewed as homogeneous or growing like plants from single seeds; they are always heterogeneous and constantly in the making. The archaeological record clearly shows an interaction between the world of the steppes and the settled agriculturalists on the plains of Bactria and Margiana. As Lamberg-Karlovsky's review of some of this evidence suggests, it is very hard to assess the scale and significance of this contact. This, unfortunately, will probably always be the case precisely because the archaeological signature of what is steppe and what is sown will remain blurred in this area of contact. I believe this record already documents perfectly a process of assimilation of peoples from the north with sedentary agriculturalists who already participated in a greater cultural tradition with millennia-old roots extending back into southern Turkmenistan and Baluchistan. These northern cowboys changed their way of life and their material culture when they entered this more developed sedentary world. From this perspective, it is not surprising that steppe ceramics are not found farther south on the Iranian plateau but recognizable Bactrian Margiana–complex materials are. We cannot identify who produced them or what language they spoke, but the processes of assimilation, movement, and interconnection that can be traced reveal how intimately integrated this Bronze Age world was.

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This paper is an inspiring introduction to the problems not only of Indo-Iranian origins but also of the results of recent Russian excavations in the southern part of the former Soviet Union. My comments relate to details and to general questions.

1. Reliance on migrations was not "typical of Russian archaeological interpretations." Childe learned from his visit that Soviet archaeologists' explanations did not appeal to "undocumented external factors," and therefore he devoted more space to Soviet theories of *in situ* cultural evolution (Trigger 1980:92, 157; Klejn 1994).

2. The theory of linguistic convergence has failed to meet the requirements of the comparative method (Watkins 1995:4). Trubetskoy was an adherent of Soviet occult supernationalism, including the suggestion that the closest relative of Sanskrit was Russian (see Matthiassen 1985, Reiter 1991, Troubetskoy 1991), and neither he nor anyone else has ever spelled out the details of the theory.

3. That the ancestor of the Indo-Iranian languages may "find its material counterpart in the Cucuteni-Tripolye culture of the Ukraine" has long been one of Renfrew's convictions (1987:95–98). In fact, the origins of the Yamna or Kurgan culture lie in local antecedents between the Dnieper and the Volga, one of which, as Lamberg-Karlovsky points out, was the Mariupol group. The Yamna-Kurgan and the Tripolye-Cucuteni are distinguished by their long separate local development on opposite sides of the Dnieper (Makkay 1992*a*). Renfrew (1999:281) now acknowledges "a continuous and apparently unbroken archaeological, and presumably ethnic, development east of the Dnieper from the earliest Kurgan period to the appearance of the Iranian-speaking Sarmatians." The continuity precludes an origin of the Yamna in the Late Neolithic Tripolye-Cucuteni cultural group.

4. The Pit Grave, Catacomb Grave, Timber Grave, and

Andronovo cultures represent chronological stages or (for the Andronovo) territorial variants. Their sequence and absolute dating are crucial to Indo-Iranian prehistory. The wider connections of the Catacomb Grave culture contradict any dating of it to the 3d millennium B.C. A complete Late Tripolye bowl found in the Aul Uliap cemetery (in Adigey territory), kurgan grave 4, grave 10, has a very well-dated counterpart from Tripolye territory: in the Usatovo I cemetery (the last phase of the Tripolye sequence), grave 12/2 yielded a typical Maikop vessel (Makkay 1992*b*). Such connections are typical of the Tripolye, Sredni Stog, and Early Yamna cultures, making the contemporaneity of particular phases of them quite certain: early Sredni Stog is equated with Tripolye B, Late Sredni Stog with Tripolye C1 and C2 (the Usatovo phase), Early Yamna with Tripolye C2-Usatovo, and Classic Maikop with Late Tripolye (Makkay 1992*a*). Grave 4 of a 3.5-m-high kurgan at Krasnogvardeisk in the northern Caucasus has yielded a contracted skeleton securely dated to the early or early middle phase of the Maikop culture. Four of the six vessels found with it are paralleled by pottery forms from the Maikop royal burial. A cylinder seal made of jet is the first indication of the symbolic use of the cylinder north of the Caucasus and is in all probability a local imitation of North Mesopotamian–North Syrian prototypes dated to about the middle of the 3d millennium B.C. at the earliest (Makkay 1994). Therefore only an absolute dating of Late Tripolye to the 26th–27th centuries is plausible. This contradicts recent absolute datings of the (post-Sredni Stog) Yamna phases to the 4th or even 5th millennium B.C. and suggestions of long-distance trade between the Uruk IV system and the Trans-Caucasian Maikop cultural area around the middle of the 4th millennium B.C. (Sherratt 1999:271).

5. I agree that the Russian arguments are not enough to indicate the ethnic and linguistic identity of the Andronovo remains. Chlenova (1984) shows a correspondence between Iranian place-names and the distribution of the Timber Grave, Andronovo, and related cultural groups. Place-names of Indo-Aryan character are scattered or absent in that area. The distribution of Scythian and related cultures around the middle of the 1st millennium B.C. neatly covers the same area. The Altaic protolanguage is much more a matter of imagination than one of comparative linguistics (see Miller 1991), and it is axiomatic in Uralic studies that groups speaking Uralic (Finno-Ugric, etc.) dialects never lived either south of the forest (taiga) belt or in Central Asia during the millennia after the retreat of the ice sheet.[1] I therefore favor a tentative identification of Andronovo (and related groups) with quite early Iranian dialects, of course with most of Lamberg-Karlovsky's important reservations and modifications.

1. There is one exception—the later protohistory of Proto-Hungarian, the speakers of which migrated south from the West or East Uralic taiga belt around the middle of the 1st millennium A.D. Renfrew (1992:2) is right when he writes that the ultimate (i.e., pre-Mesolithic) origins of the Uralic family may well lie in the areas that are now steppe lands.

Lamberg-Karlovsky's critical approach to the supernationalist wave now inundating the new Russian empire is very important. However, I consider the fortified sites of the "country of towns" to have been sacred enclosures, local variants of much earlier and partly contemporary parallels found in the more western areas of the Central European Linear Pottery culture and its descendants (Makkay 2001).

6. Childe's remark about the attitude toward undocumented external factors in Soviet archaeology seems to correspond well with Lamberg-Karlovsky's observations during his visits to Gonur, Togolok, and Djarkutan: unexplored stratigraphic sequences, the nearly total lack of stratigraphic periodization of 2.5 m of accumulation, etc. Most of the excavations and publications in the area of the Bactrian Margiana complex seem to me short of detailed scientific values. Therefore the observations of a colleague from abroad may greatly benefit those at home.

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There are at least two issues raised by this wide-ranging paper that seem to invite comment. The first concerns what I take to be critical hyperbole regarding the identification of either the steppe cultures or the Bactrian Margiana complex with Indo-Iranian. While we may agree that there is no one-to-one relationship between material remains and language, there are still degrees of geo-linguistic plausibility. For example, that Altaic, Ugric (I think Lamberg-Karlovsky must mean Finno-Ugric here), and Elamo-Dravidian have equal claims on the areas involved with Indo-Iranian is not impossible but surely not very probable. From the earliest written testimony of the 1st millennium B.C. it appears that almost the entire region discussed was occupied, according to tribal and personal names and the occasional item of vocabulary, by the eastern branch of Iranian (Mallory and Mair 2000, Mallory n.d.). We can chart the later evidence for Turkish (Altaic) presence in this area, so it is at least very unlikely that Andronovo was Altaic. I know of no one who assigns the Finno-Ugric languages to the steppe lands (the reconstructed vocabulary of all the branches is adamantly arboreal and reflects largely a hunting-gathering-fishing economy, with later Indo-Iranian loanwords providing our earliest evidence of stock breeding and agriculture [see Napolskikh 1997]). That the Bactrian Margiana complex was Elamo-Dravidian is possible (see below), but making the steppe cultures Elamo-Dravidian (up to the end of Andronovo at ca. 900 B.C.?) would require an archaeological performance of Von Däniken–like proportions to get the Indo-Iranians from wherever one wants to stash them for several millennia to their historical locations. The same goes for making the Andronovans a language family that became extinct before we have any written evidence. The only way (logi-

cally) out of this corner is either to accept Renfrew's (1987:189–97) "Plan A," which sees linguistic continuity in India and Iran from the spread of the Neolithic (a position that he himself has rightly abandoned [e.g., Renfrew 1999:280–81]), or to assume that the Indo-European homeland itself was in South (Misra 1992) or Central Asia (Nichols 1997), models which throw up other problems so enormous that they make the Indo-Iranian issue look like child's play. Andronovo and the Bactrian Margiana complex really do appear to be the only game(s) in town, and Lamberg-Karlovsky has indicated why they appear to be mutually exclusive solutions, neither capable of resolving the problem by itself. There is no single culture (using the word in the widest—even most unjustified—sense) that can link the Indus, Iran, Central Asia, and the steppe lands together.

As Lamberg-Karlovsky indicates, a solution that rests on some "form of symbiosis" between the steppe tribes and the Bactrian Margiana complex remains "utterly elusive." For some time I have tried to inch forward on this front because I too have felt the inadequacy of employing the spread of material culture as proxy evidence for linguistic movement. The problem here is not just the long-rehearsed criticism against assuming that pots = people/language but that there are clear instances, the Indo-Iranians being a case in point, in which there is no hint of the distribution of any archaeological assemblage that might correlate with the distribution of the target language group. The situation is so dire that we can't even make the type of mistake Lamberg-Karlovsky warns us about!

Working from first principles, it has seemed to me that archaeologists engaged in tracing linguistic entities need to concentrate on the archaeological manifestation of language shift, and this may be independent of the trajectories of material culture (Mallory 1992, 1998b). Language shift may occur in some obvious instances of subsistence differences, for example, the Neolithic models posed by Renfrew (1987) and Bellwood (2000), but in many instances I suspect that we are dealing with language shift due to social differences that are not obvious in the archaeological record.

Impressed by Ronald Atkinson's (1994) treatment of the spread of the Acholi in Uganda, I think that we should be looking for evidence for competing social organizations and attempting to predict which would most likely bring about linguistic shift and expansion. Lamberg-Karlovsky (1994) has already reviewed the ethnohistorical evidence for suggesting that the Bactrian Margiana complex might have been organized as a khanate. The four-tiered political system evident in Central Asia in historical times bears a close resemblance to the four-tiered political structure reconstructed for Proto-Indo-Iranian by Emile Benveniste (1973). What is of considerable interest is the highest tier, the one which would incorporate the greatest number of people—the *dásyu (Old Indic *dasyu*, Avestan *dahyu*). In a recent study Lubotsky (n.d.), this term has been regarded as a non-Indo-European substrate term that was borrowed into Proto-Indo-Iranian along with a series of other words associated

with religion (words for "priest," "magic," deities, and even "soma"). Lubotsky has suggested that these words may have had a Central Asian source, and it seems to me that the Bactrian Margiana complex, with its elaborate (to a steppe pastoralist) ritual architecture, would make a plausible candidate (and if Elamo-Dravidian, we might at least hope for some lexical correlations between the putative loanwords and their proposed sources; otherwise, these people may have spoken a language that has not survived). My current model, admittedly no more supported by archaeological evidence than the previous discussion alluded to by Lamberg–Karlovsky, is to assign some form of Indo-Iranian identity to the Andronovo but see their expansion southward in terms of their adoption of both political and religious concepts (including material manifestations of these concepts) from the Bactrian Margiana complex. The spread of Indo-Iranian languages then would be through the vector of the Andronovo culture on the steppe but by way of the Bactrian Margiana complex to its south. Steppe tribes that came into contact with the Bactrian Margiana complex would be required to retain their language (Indo-Iranian) but would gain a more incorporative social organization from their neighbours as well as a series of religious concepts and practices, perhaps in the same way that the Acholi of Uganda retained their Luo language but gained from their Bantu neighbours the more incorporative chiefdom system which permitted them to carry both their new social organization and their *own* language to the north (Atkinson 1994). Both the social and the religious organization (see Erdosy 1995) of Bactrian Margiana–complex-inspired Indo-Iranians would then become the vector for language spread southward. Obviously, all of this would require far more intimate relationships between the Andronovo and the Bactrian Margiana complex than the existing distribution of "mutually exclusive" material culture would permit, and what is clearly at stake, as I suspect Lamberg-Karlovsky would agree, is our confidence in our ability to read the record of social processes from the archaeological record.

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Archaeolinguistics is in many ways still in its infancy, and by its nature it must rely on extensive cooperation among linguists, archaeologists, cultural and physical anthropologists, historians, and others. Comprehensive collaboration and coordination of data are arduous. Cross-disciplinary communication is rarely even adequate; the various disciplines depend upon quite disparate types of evidence to perform their reconstructions, and it is unclear to what degree there is comparability among the different data sets; and it has not been established that there are strong correlations between shifts in one data set and those in another in a particular time or place. There is often a tacit acceptance that suites of

cultural traits, including language, move in unison across the landscape as though they were people. Innumerable historical and modern examples could be given to contradict that assumption, of course, but at the same time, patterns often do emerge. As prehistorians and linguists, we have to decide when the patterns are sufficient to support a particular model. Such decisions will always be subjective to some extent, and thus there will continue to be compelling arguments for competing models. Part of the problem is that there are so many different ways in which language and culture can be transferred from one region to another or from one group of people to the next. Although many of the problems may never be resolved, we can definitely improve upon our current knowledge.

As Lamberg-Karlovsky points out, before we can fully assess the utility of our methods in reconstructing the growth and spread of languages, much more groundwork needs to be laid for local chronologies. Chernykh (1992: 296–97) draws attention to the fact that it can be difficult to demonstrate internal transformations of a culture over time. Before any attempts can be made to link language to artifacts, it is necessary to understand whether change represents one culture's own gradual transformation or the introduction of new elements through invasion, migration, or other means. More often, it is a blending of the indigenous with the intruding society. Which language dominates depends upon the circumstances.

We also need to understand regional spheres of shared cultural identities better temporally and spatially. For example, it is becoming clear that a "Geometric Comb-Impressed Pottery" cultural sphere existed in the forest-steppe from the southern Urals eastward to northern Kazakhstan during the Eneolithic or Copper Age of the 4th millennium (Matyushin 2000, Shorin 1999). This included the Surtanda, Tersek, Botai, and several other cultures. Shared traits include relatively large settlements (3 to 9 hectares) of rectangular houses, cord- and comb-impressed pottery with geometric designs such as hatched triangles, a biface-dominated lithic industry, and an economy emphasizing horses and possibly other domesticated herbivores. It appears likely that this cultural sphere emerged out of a Neolithic in the Urals and then spread eastward with the advent of livestock husbandry.

These semisedentary herders then may have developed into the nomadic pastoralists conveniently lumped together as the Andronovo by many prehistorians. The meridianal migration patterns that persisted among the Kazakh herders until 1929 were initiated during the Bronze Age. Although the subsequent Iron Age cultures of Kazakhstan, such as the Saka, continued using the same migration patterns and buried their important leaders in kurgans even larger than those of their immediate predecessors, their material culture differed dramatically. The Iron Age cultures are generally understood to be Indo-Iranian, so whether they emerged out of the Andronovo or came from the outside is quite an important issue. There is a small amount of evidence for the development of "animal-style" art in the Late Bronze Age of Kazakhstan, but it does not really begin to flourish until the Iron Age. The exquisitely comb-impressed Bronze Age pots are succeeded by the poorly made plain-ware vessels of the Iron Age. Large metal cauldrons and stone and bronze censors appear, and gold objects become remarkably abundant in the more important kurgans. At least three so-called gold men have now been found in Kazakhstan. Mythological beasts including the sphinx, the griffin, and the winged horse become prevalent icons. To date, only horned horses are visible icons in the Bronze Age of Kazakhstan, if the petroglyphs at Tamgaly are indeed Bronze Age.

It would seem necessary first to establish whether the Andronovo evolved into the Iron Age cultures, were replaced, or were absorbed by external forces before it is possible to state that the Andronovo were Indo-Iranian as Kuzmina (1994) believes. The fact that they practiced meridianal migration of the same livestock over the same territory is not adequate support for the idea of a smooth indigenous transformation from the Bronze Age to the Iron Age or a common language stock. The Kazakhs speak a Turkic language and until recently used the land in much the same way as the Andronovo did. We do not assume that the Andronovo spoke a Turkic language because we know that the Kazakhs have a fairly recent history in this region.

Much exciting archaeological investigation is currently being undertaken in Kazakhstan as elsewhere, so I am optimistic that future scholars will be better equipped to flesh out our rather sketchy models for the spread of languages. For now, it is important that more surveys and settlement-pattern studies be implemented, that thorough analyses of artifact technology, style, and raw-material sources be conducted, and that communication across disciplines and political borders be increased.

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Lamberg-Karlovsky correctly states that "ethnicity and language are not easily linked with an archaeological signature," and he is certainly right that, if it is assumed that the prototypes for the Indo-Iranian languages reached the Iranian plateau and the Indian subcontinent from the north, then the archaeological mechanism of their transmission remains deeply mysterious. Yet at the same time there are few serious scholars of Indo-European today who would situate an Indo-European homeland in the Indian subcontinent, and therefore such a transmission seems likely to have taken place. Many scholars today would situate Proto-Indo-Iranian in the Eurasian steppes at about the time of the Andronovo culture. Yet Sarianidi has indeed suggested that there are features of the Bactrian Margiana archaeological complex at about the same time which could be relevant to the issue.

However, the problem does have to be set in a wider context, and Lamberg-Karlovsky oversimplifies when he

asserts that "the PIE community split into two major groups. One group migrated west to Europe and became speakers of Indo-European . . . while the other headed east to Eurasia to become speakers of Indo-Iranian." Many Indo-Europeanists would today agree that the first of many splits was between Proto-Anatolian and "narrow" Proto-Indo-European (see Drews 2001) and that the branching off of Indo-Iranian came rather later, as Ringe and Warnow have shown (Warnow 1997). Moreover, the populations of the steppe lands in the 1st millennium B.C. and for some centuries after (Sarmatians, Scythians, Saka, Khotanese, Sogdians, et al.) spoke languages which were in most documented cases within the Iranian subfamily. This is one strong argument why the earlier steppe populations, for instance, of the Andronovo culture, may well be thought to have spoken a Proto-Iranian or Proto-Indo-Iranian language or languages. Yet at the same time it should be borne in mind that one important eastern Indo-European language— Tocharian—does not belong to the Indo-Iranian subfamily. Any acceptable solution will need also to account for that circumstance.

Mallory (1998b) summarizes the problems very well in his contribution to the publication of the Philadelphia conference organized by Victor Mair, in which Hiebert (1998) also draws attention to the potential relevance of the Bactrian Margiana archaeological complex. Mallory indicates a series of three "fault lines" of geographical significance: the Dniester-Dnieper line, the Ural line, and the Central Asian line (separating the steppes from the Iranian plateau), of which the third is particularly relevant.

It is in my view evident that these problems will not be resolved until there is a clearer appreciation that in the steppe lands the horse was not used for military purposes until harnessed to pull the spoked-wheel chariot in the early 2d millennium B.C. (Kuzmina 1994, Anthony and Vinogradov 1995) and not ridden in warfare until the end of the 2d millennium (Kuzmina 1994, Renfrew 1998), although, as Lamberg-Karlovsky states, it is documented as a mount for messengers some centuries earlier in the Near East (see Oates n.d.). As Levine (1999) has shown, the domestication of the horse was a complex process in which cavalry came millennia after hippophagy.

The problem remains one of the most puzzling in Indo-European studies. I suspect that the presence of Indo-Aryan (not Indo-Iranian) in the Mitanni texts gives a hint that Proto-Indo-Iranian is to be set rather earlier than some have placed it, perhaps in the 3d millennium B.C. There is no reason that the Bactrian Margiana archaeological complex should not be part of the story: it could well have contributed soma to the Indo-Iranian cultural tradition of India without its populations' speaking an Indo-European language. So perhaps Lamberg-Karlovsky presents us with a misleading dichotomy in setting the Bactrian Margiana complex and the Andronovo culture into a kind of antithesis. Both may well be part of the story. He is surely right to stress its complexity in his useful review.

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Lamberg-Karlovsky argues that the more or less contemporaneous Andronovo and Bactrian-Margiana archaeological complexes are different archaeological cultures and that we have no way of determining the language spoken by the bearers of a remote archaeological culture. From this he concludes that these cultures *could* have been Indo-Iranian, Dravidian, Altaic, or any combination of the three. As a linguist who uses linguistic data for historical reconstruction, I agree with his methodological approach and have learned a lot from his paper, but I have some comments to add.

1. The type of human language that linguists deal with developed in the Neolithic Age. Stability of grammatical structure requires long-term feedback for which the sociological conditions were not present in the Palaeolithic and Mesolithic, when small groups were constantly on the move. Linguistic families could have been consolidated, from whatever antecedents, only in the Neolithic. This excludes the possibility of any such "megaprotolanguage" as the Nostratic school.

2. There are serious problems in determining the chronology of the Common Altaic protolanguage. The question is not whether an Altaic protolanguage existed but how shared linguistic material due to early contacts can be distinguished from that inherited from the supposed Common Altaic. Whatever the answer to this question, it is very unlikely that in the chronological range of Andronovo and the Bactrian Margiana complex a Common Altaic (still) existed. This means that the possible languages of the bearers of these archaeological cultures can only be Turkic or Mongolian (for several reasons I would exclude Manchu-Tunguzian and other supposed Altaic languages such as Korean or Japanese).

3. The cultures reflected by the lexical stocks of the Turkic and Mongolian protolanguages had highly developed animal husbandry with horses, limited knowledge of agriculture, and almost no signs of sedentarism. Turkic or Mongolian could be connected with the Bactrian Margiana complex only if we were to suppose that after the dissolution of that complex they lost the lexical groups that must have been present in it. This is unlikely. Both Proto-Turkic and Proto-Mongolian could, however, reflect a culture like the Andronovo.

4. The Andronovo population could have spoken languages belonging to other linguistic families. The linguist can prove the existence of a multilingual society by demonstrating early linguistic contacts from the period under discussion (2d millennium B.C.) that do not contradict the cultural background reflected by the archaeological material. At present historical-linguistic efforts in Altaic studies have been successful in going back to the last few hundred years of the 1st millennium B.C. (see Róna-Tas 1991, 1998). The gap between the middle of the 2d and the middle of the 1st millennium B.C. is bridged only by vague hypotheses with a handful of starred forms.

5. There are, as far as I know, no contemporary studies on early contacts between Ancient Turkic and Tocharian (Róna-Tas 1974, on which see Reinhart 1990, and Róna-Tas 1991) or between Ancient Turkic and Iranian (not to speak of Indo-Iranian [see Róna-Tas 1988]). This is not the case with Finno-Ugric (Korenchy 1972, Joki 1973, Harmata 1977, Rédei 1986).

6. Though language may be one of the most important indicators of ethnic identity, ethnos and language-speaking community are by definition two different entities that may be but are not necessarily identical (see Róna-Tas 1999:5–15).

7. Replacing the great gaps in our knowledge with unfounded theories (in most cases biased by ideology) would interfere with the hard daily work of linguistic reconstruction. Future work will be aided by surveys like that of Lamberg-Karlovsky.

Reply

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I am grateful for the informative and challenging responses. It is not surprising that the majority continue to hold the view that the bearers of the Andronovo culture spoke Indo-Iranian. Consensus is not, however, the hallmark of all responses. Anthony sees the Andronovo originating in the Don-Volga region and migrating eastward, while Sandra Olsen suggests that the Surtanda, Botai, and other cultures from the southern Urals to northern Kazakhstan "may have developed into the nomadic pastoralists conveniently lumped together as Andronovo." Anthony (1995; see also Anthony and Vinogradov 1995) has written that the Sintashta-Petrovka culture was the first Eurasian steppe culture to display traits central to the culture of the Indo-Iranians. He believes that specific attributes of that culture were later carried into India and Iran by the Vedic Aryans. He makes direct comparisons between the sacred text of the Rigveda and the archaeological record recovered from the Sintashta-Petrovka culture—horse sacrifice, the burial of carefully segmented parts of the horse's body, chariotry, and sumptuary burial goods. Identifying the Sintashta-Petrovka culture as Indo-Iranian and relating it to the Vedic Aryans is linking an archaeological culture of ca. 1900 B.C. with a text written about 1,000 years later. (For a comprehensive and well-balanced study of horses, chariots, and Indo-Europeans in the context of archaeology and linguistic paleontology, see Rauling 2000.)

Anthony subscribes to a linear progression of cultures that begins with the Sintashta-Petrovka and gives way to a wide variety of "major variants," including the "conservative" Alakul and the "innovating" Fedorovo. What troubles me is that, on the one hand, he characterizes the Andronovo as having a cultural "commonality," a sort of primordial, unchanging culture, inhabiting the regions from southern Russia to China throughout the 2d millennium, while on the other hand he asserts that the Andronovo consists of a mosaic of cultures (Alakul, Fedorovo, Sintashta-Petrovka, etc.). Assertions of this sort in the literature, whether English or Russian, are rarely supported by demonstrations of the material differences (i.e., types and styles) that characterize the supposedly distinctive Andronovo cultures. Philip Kohl's comment is pertinent here: "Archaeological cultures should not be viewed as homogeneous or growing like plants from single seeds; they are always heterogeneous and constantly in the making." Perhaps it is my lack of belief in relating the Sintashta-Petrovka with the Rigveda, separated as they are by 1,000 years and almost as many miles, or in the alleged homogeneity of the Andronovo that Anthony finds "inaccuracies" in my article.

Hamilakis thinks that I do not go far enough in criticizing the ontological, epistemological, and political foundations of archaeology. I think that he goes too far in arguing that archaeology is merely "a cultural production, dealing with stories and narratives about the past in the present." We have all been subjected to postmodernist rhetoric, and Hamilakis is treading well-plowed terrain. The past can be as real as the chariots and wagons recovered and the reconstructed agro-pastoralist economy of the steppes. Over the past century archaeology has done far more than tell political "just-so" stories. Its enormous contributions and successes may be found in any good introductory text.

Kohl closes his thoughtful comment by stating that the evidence suggests how "intimately integrated this Bronze Age world was." But was it? Why, then, the relatively sharp boundaries that divide the distribution of the material culture in neighboring territories—that of the steppes from the Bactrian Margiana culture or that of the Indus from the cultures of the Iranian Plateau or the culture of Mesopotamia from that of the Gulf? In reality material remains from one culture are rarely found in a neighboring one. When such an object is found it is typically an elite commodity—a seal, a fragment of statuary, or an elaborately carved stone bowl. One might also note that there is an asymmetry in the distribution of these foreign goods. Thus, steppe materials are found in the Bactrian Margiana complex but not the reverse; Indus materials are found in Mesopotamia, but the reverse is *extremely* rare; Bactrian Margiana remains are found on the Iranian Plateau and in the Indus Valley but not the reverse. Such asymmetrical distributions are probably significant, but their meaning remains elusive. It is important to emphasize that the materials evidencing such contact, wherever they are found, are quantitatively rare. The Mesopotamian texts, our only literate source, are almost completely silent on the extent of their "intimate integration" with the "other." Texts do refer to a trade in textiles and grain, which, as neither survives in the archaeological record, may balance the apparent asymmetry in trade relations and amplify its limited evidence. The archaeological record, however, certainly supports the conclusion that trade emphasized elite goods in a context of their scarcity. Globalization

characterizes our own day, and therefore, not surprisingly, archaeologists entertain the reality of Bronze Age "world systems," a direction pioneered by Philip Kohl. If one looks to the limited nature and even more limited quantity of the elite materials traded, then the opposite side of the economic coin suggests an obstinate isolationism rather than an "intimately integrated" Bronze Age. Perhaps the relatively slow pace of change, whether in the Andronovo or in the Indus Valley, is due to such isolation. As Jared Diamond (2000:25; see also 1999) has observed, "In any society except a totally isolated one, more innovations are brought from the outside not conceived within . . . competition between human societies that are in contact with each other is what drives the invention of new technology and the continued availability of technology." In archaeology this view flies in the face of what is au courant, namely, "world systems" that attempt to bring Bronze Age cultures, on a continental scale, into an integrated sphere of economic interaction.

Makkay (2000) has recently reviewed the literature regarding the relations between Sintashta, Mycenae, and the Carpathian Basin and the early Iranians. Here he offers a complex series of chronological equivalences that relate specific phases of the Tripolye, Sredni Stog, Yamna, and Maikop cultures. There is a difference of almost a millennium between Makkay's chronological reconstruction and recent C^{14} dates, a fact that ensures controversy. Makkay's correlations are often made on single artifacts of presumed stylistic/typological similarity distributed over a vast region and frequently of dubious provenance. Clearly, the jury is still out regarding the dating and correlations that tie the cultures of the west (Tripolye) to those of the Caucasus (Maikop) and the Eurasiatic steppe (Yamna).

Mallory enriches and expands the discussion beyond Indo-Iranian concerns. I am in agreement with his broad perspective and find his suggestion of looking at competing institutions to identify the one most likely to bring about linguistic shift and expansion an appealing one. However, competing institutions within distinctive cultures are likely to engender conflict and even warfare, and between the Andronovo and Bactrian Margiana complex there is little evidence to suggest either. Unfortunately, processes of cultural assimilation, acculturation—indeed, the very nature that brought about culture contact—are undertheorized. Until we can comprehend such processes in specific archaeological contexts, questions of language shift and expansion remain moot. Mallory, along with many linguists and not a few archaeologists, has a penchant for equating a single archaeological culture with a single language. Is it not possible for peoples of the past to resemble their modern counterparts in Central Asia and the steppes, where two or three languages are the norm, where Tadjiks (Iranian-speakers) marry Uzbeks (Turkic-speakers) and their children speak Russian?

Renfrew suggests that I create a "misleading dichotomy in setting the Bactrian Margiana complex and the Andronovo culture into a kind of antithesis." This is precisely what I meant to do. In their environmental settings, subsistence economies, and material cultures, the Andronovo and the Bactrian Margiana complex could not be more different. Renfrew favors an Indo-Iranian identity for the Andronovo, and he fully realizes that there is not a shred of evidence that identifies the Andronovo with the traditional homeland of the Indo-Iranian-speakers either on the Iranian Plateau or in South Asia. There is, however, clear evidence for a Bactrian Margiana presence on the Iranian Plateau (Amiet 1984, Hiebert and Lamberg-Karlovsky 1992) and in South Asia (Jarrige 1993, n.d.). In fact, the extensive evidence for Bactrian Margiana materials recovered from Susa, Shahdad, Yahya, Khinaman, Sibri, Nausharo, Hissar, etc., might make it the prime candidate for Indo-Iranian arrival on the Iranian Plateau. The problem is that the distinctive material culture of the Bactrian Margiana complex utterly vanishes, apparently completely assimilated by the indigenous cultures of the Iranian Plateau. In this context one might borrow a valuable concept advanced by Renfrew and suggest that the Indo-Iranian-speaking Bactrian Margiana complex represented elite dominance and the indigenous peoples, although in the majority, adopted their language. How would one verify such a concept in the archaeological record?

Róna-Tas appears to avoid the Indo-Iranians entirely and suggests that both Proto-Turkic and Proto-Mongolian could "reflect a culture like the Andronovo." Such diversity among the Andronovo appeals to me. Framing the question as what language the Andronovo spoke is, I believe, misdirected. The Andronovo was made up of many cultures subject to constant change; some may have spoken Indo-Iranian, others Proto-Turkic, and yet others Proto-Mongolian, and, *pace* Mallory, there may have been an occasional Finno-Ugric-speaker among the lot.

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