Social Complexity in Prehistoric Eurasia

Monuments, Metals and Mobility

BRYAN K. HANKS
KATHERYN M. LINDUFF

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Social Complexity in Prehistoric Eurasia challenges current interpretations of the emergence, development, and decline of social complexity in the steppe region of China and the former Soviet Union. Through a thematic investigation of archaeological patterns ranging from monument construction and use to the production and consumption of metals and the nature of mobility among societies, the essays in this volume provide the most up-to-date thinking on social and cultural change in prehistoric Eurasia. Collectively, they challenge broader theoretical trends in Anglo-American archaeology, which have traditionally favored comparative studies of sedentary agricultural societies over mobile pastoralist or agro-pastoralist communities. By highlighting the potential and limitations of comparative studies of social complexity, this volume sets the agenda for future studies of this region of the world. It emphasizes how the unique nature of early steppe societies can contribute to more comprehensive interpretations of social trajectories in world prehistory.

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SOCIAL COMPLEXITY IN PREHISTORIC EURASIA

Monuments, Metals, and Mobility

EDITED BY

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CONTENTS

PART TWO MINING, METALLURGY, AND TRADE

PART THREE FRONTIERS AND BORDER DYNAMICS

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FOREWORD

From Myth to Method

Advances in the Archaeology of the Eurasian Steppe

Colin Renfrew

In recent years, the archaeology of the Eurasian steppe has seen some remarkable advances. Up to a couple of decades ago, it seemed that little progress was being made, despite important archaeological discoveries in a number of relevant countries. The same rather simple models, based on an undifferentiated view of mobile steppe pastoralism and the notion of a short yet significant episode in which the domestication of the horse was achieved, had held sway since the early twentieth century. The valid contrasts emphasized in *The Steppe and the Sown* by Peake and Fleure (1928) led in the early work of Gordon Childe (1926) to a simplistic view of mounted nomad pastoralists, a view that has survived into recent times, although it was later reassessed by Childe himself (1950).

Today the picture is completely transformed, as the present volume emphasizes. In particular, recent discoveries have now allowed a clear differentiation to be established between the developments of the Bronze and Iron Ages in the steppes, in social and economic terms as much as in metallurgy. The development toward a pastoralist economy in the earlier Bronze Age, as well exemplified by the Sintashta culture of western Siberia with its chariot burials (Koryakova and Epimakhov 2007: 66–80; Parzinger 2006: 251–259, 338–342), was not accompanied by any conspicuous evidence of horse riding for military purposes, although horses are documented for drawing chariots as early as 2000 BCE and were presumably ridden earlier than this for the purposes of herding (see Renfrew 1998). It was not until the Iron Age, in the first millennium BCE, that Eurasian nomad pastoralism developed as a militarily significant enterprise with a complex, hierarchical, and ramified social

structure utilizing effective military power based upon the deployment of mounted warriors (Koryakova and Epimakhov 2007: 209–220; Parzinger 2006, 679–692). This was the period of the first great kurgans, such as at Arzhan in the Tuva area (Parzinger 2006: 606–619; Koryakova and Epimakhov 2007: 327), which may be regarded as royal burials of a nomadic elite, anticipating by several centuries the Scythians as they appear in the writings of Herodotus.

Steppe archaeology is now one of the most dynamic fields in the whole ambit of prehistoric studies, as is reflected in the publications of some earlier conferences (e.g., Mair 1988; Levine et al. 1999; Boyle et al. 2002; Levine et al. 2003) and documented in the recent magisterial survey by Parzinger (2006). The reasons for this upsurge in interest and in productive research are several, and they are well exemplified here.

In the first place, the vast terrain of central Eurasia has opened up to scholarship. International meetings are being held within the area, at sites such as Arkaim or Gonur Tepe, as much as in Beijing or Pittsburgh. This new openness has facilitated publication in the West by major scholars who did not earlier enjoy a wide readership there (e.g., Chernykh 1992; Mei 2000) and the participation in the field of a whole new generation of younger workers, many of whom are represented in this volume.

Second, it is at last possible to compare and contrast the various cultures, across a terrain that reaches almost to the Pacific Ocean in the east to lands bordering the Mediterranean Sea in the west, with the benefit of a secure chronological framework. Radiocarbon dates, increasingly accompanied by tree-ring dates in some cases, are beginning, for the first time, to produce a coherent chronology (see Hanks et al. 2007). Already there have been some shocks. The relatively early date of the Sintashta culture, associated with the first use of the chariot, is now well documented. And at the conference whose papers are presented here, the early dates for the Maikop burial, presented by Chernykh, and discussed also by Kohl, offer not so much a refinement as a disruption of most earlier assumptions.

Through these new projects, new areas of research are opening up. Prominent among these is the development of trade. New research on the sources and early use of tin has offered this commodity as one salient vector for the rapid development of bronze metallurgy in the later Bronze Age. There, as in other areas of steppe archaeology, the work of colleagues from the German Archaeological Institute, often in collaboration with scholars from the steppe lands or neighboring countries, has been particularly important. Moreover, the ecology of the exploitation

of the steppe lands is now the subject for sustained research. The basis for the early use of the area, before the development of the full system of mobile pastoralism seen during the Iron Age, is under investigation. And the much-debated question of the domestication of the horse is seen in a new light, especially when careful distinction is made between horses for food, to facilitate herding, for pulling chariots, and to support armed warriors. Molecular genetic research, applied to plant and animal species, is proving as relevant here as when applied to living human populations.

These approaches and the application of new models for change and of new explanatory frameworks have led to an exciting quickening in the pace of research, as the chapters in this volume document. A number of broad questions can now be posed rather more clearly. It is evident that the mounted warriors of the great chiefdoms of the Iron Age, some of them designated by classical writers as Cimmerians and Scythians, relied upon a social order and an economic system that were remarkably successful. They seem to have emerged in the first millennium BCE but were based on earlier antecedents. How can we better define the social and economic systems that sustained these prosperous mobile communities?

The communities of the Bronze Age of the second millennium BCE that preceded these clearly were themselves innovators, and it was during this time that the first great trading networks seem to have been established. We see the settlement archaeology of some of these communities in sites like Sintashta and Arkaim, in the so-called country of towns. But can we define more precisely the economies and societies at this time, including those of the Andronovo culture? The horse is documented as used for pulling chariots already at the beginning of the second millennium. But can we establish more clearly when horse riding became significant for military purposes? Yet the initial domestication of the steppes must have begun before this time. The evidence for plant and animal domesticates is not yet very abundant before 2000 BCE, yet by then some of the important transitions must have been occurring.

Issues need to be defined more clearly before we can hope to understand by what means, for instance, the horse-drawn chariot reached China. Early steppe metallurgy too needs further study, if we are to establish definitively whether the surprisingly late use in China of copper and of bronze was a technology learned from the West. Perhaps we are close to seeing answers to some of these questions.

The benefits to our understanding of world prehistory will then be immense. From a broad perspective, the degree and nature of the influence and which way the arrows of transmission point still have to be established conclusively on the basis of secure data. That goal is now within reach. There are also vast issues in linguistic prehistory. What was the role of the steppe communities in the dissemination of the languages of the Indo-European family? That vexed question has not yet been satisfactorily answered (see Anthony 2007), and some recent initiatives offer results that are disconcertingly inconclusive (Lamberg-Karlovsky 2002). In particular, the problem of how the Indo-Iranian languages (or their precursor) reached South Asia remains to be resolved. In a similar vein, we need to understand better the archaeological record to document the Mongol invasions and to explain the present-day distribution of languages in the area.

Such linguistic issues, however, simply serve to emphasize the critical role of the Eurasian steppe lands in world prehistory. At times, these vast tracts of land have served to separate two very active and sometimes independent heartlands of cultural activity: western Asia (with the eastern Mediterranean) to the west and China to the east. At other times, particularly with the more effective use of the horse and of the camel, they have formed an important zone connecting these two great centers (or congeries of centers) of domestication and later of civilization. The proper understanding of these changing interactions is now one of the major tasks that prehistoric archaeology has to address, and the essays here take some important steps in that direction. A few decades ago, the question of long-distance interactions across the Pacific Ocean was a puzzling and a much-disputed one. Today it seems largely resolved, and the complex question of trans-Eurasian interactions now seems more pressing. Significant interpretive problems remain, however, and continue to be controversial, as noted by Philip Kohl (2007: 133) in his recent thoughtful study of Bronze Age Eurasia:

> Simplifying [two] starkly opposed interpretive models, one can say that the first group [of scholars] sees the basic direction of movements or cultural impulses even before the beginnings of the Bronze Age as proceeding east to west, whereas the latter group reverses the arrows and essentially interprets developments on the Pontic steppes and further east as ultimately dependent on innovations that were associated with the sedentary agricultural societies first of southeastern Europe, including the Cucuteni-Tripolye culture, and the mixed agricultural/transhumant societies of the Caucasus.

That expresses the dilemma, perhaps in its simplest form. It is further complicated by the additional role that the steppe lands may have played through their interactions with the Indian sub-continent, mediated by the arid yet potentially fertile lands that lie between, such as Turkmenistan and Serindia (including Xinjiang Province). These interactions varied dramatically with the changing nature of the societies in those different regions and with their assessment of the benefits of trade, travel, and conquest in the context of developing transport mechanisms and of the fluctuating range of commodities traded, not least metals and silk.

This timely volume addresses some of these important topics. It will make a significant contribution to the understanding of the prehistory and the cultures of the steppe lands and their neighbors.

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CHAPTER 1

Introduction

Reconsidering Steppe Social Complexity within World Prehistory

Bryan K. Hanks and Katheryn M. Linduff

This volume brings together a collection of essays that focuses specifically on themes connected with the analysis of social complexity in the third to first millennium BCE in the Eurasian steppe. This dialogue stems from a symposium held at the University of Pittsburgh in February 2006 that sought to evaluate current trends and to determine new directions for the study of Eurasian steppe archaeology. What became apparent during this meeting was that the steppe region has moved firmly into the spotlight of world prehistory and contemporary archaeological theory. No longer viewed as closed geopolitical spheres, the territories of the former Soviet Union and neighboring regions, and the traditions of research that have addressed these areas, have become promising new arenas of international collaboration. Important questions surrounding the emergence and diffusion of agricultural and pastoral adaptations, early metallurgical technologies and their use, and the role of mobile pastoralist societies in China, Central Asia, and Europe have become significant topics within scholarly discourse in recent years. Such issues are clearly reflected in the publication of three new, seminal books in 2007 on the Bronze and Iron Ages of the steppe region (Anthony 2007; Kohl 2007; Koryakova and Epimakhov 2007).

The chapters offered within this volume not only examine these important issues in steppe archaeology but also seek to contribute more specifically to a broader comparative theoretical analysis of early social complexity in world prehistory. Although it is undeniable that regional culture histories provide the basic foundation for descriptive and analytical archaeological patterns, such regional treatments also should be

viewed from a broader theoretical perspective in order to build and refine models of understanding for the various trajectories of human development that have existed. As the chapters in this volume clearly indicate, steppe archaeology can contribute significantly to this agenda.

As Colin Renfrew discusses in the Foreword, several recent conferences and publications have added substantially to the growing corpus of literature on steppe archaeology. For example, international conferences held at the University of Cambridge (Boyle et al. 2002; Levine et al. 1999), University of Chicago (Peterson et al. 2006; Popova et al. 2008), and the Arkaim Heritage Center in the Russian Federation (Jones-Bley and Zdanovich 2002) represent important benchmarks in the rapidly developing field of Eurasian steppe archaeology.

Broader comparative treatments on early social complexity in other parts of the world have rarely turned to the Eurasian steppe region as a source for examining the emergence of hierarchy and heterarchy; scalar problems connected with socio-economic integration and organization; patterns of political centralization; and the role that subsistence and productive economies have in stimulating the emergence, development, and decline of socio-economic change. In contrast to this, two recent monographs published in English in the Russian Federation have sought to develop more encompassing comparative analyses of early states and the materialization of power within early civilizations (Grinin et al. 2004; Grinin et al. 2008). For example, *Hierarchy and Power in the History of Civilizations: Ancient and Medieval Cultures* (Grinin et al. 2008) brought together scholars addressing these themes for ancient states of the Old World, medieval Eurasian states, and the Maya region for New World states. Such dialogues being produced in English by Russian publishers are a welcome accomplishment in international scholarship and are clearly reinforcing the broader relevance of Eurasian steppe archaeology.

The rationale for our volume adds to this new paradigm by focusing more specifically on prehistoric developments connected with complex, non-state societies. These middle-range societies have been routinely categorized as tribes and chiefdoms, with various levels of complexity. Although ample debate has surrounded the use of neo-evolutionary terminology for the study of early societies, such terminology continues to be used when interpreting prehistoric steppe developments. Surprisingly, the earlier studies that produced such terminology rarely looked at mobile pastoralist or agro-pastoralist societies and instead routinely focused on sedentary, agricultural developments. We intend here to re-evaluate these trends in scholarship in order to determine whether

such models have a place within studies of early social complexity in the steppe and to see if such applications contribute to, or perhaps challenge, the application of such modeling to the study of early social trajectories in world prehistory. Contributing authors to this volume, therefore, provide important discussions of historically contingent developments in the steppe and neighboring territories that are linked not only to unique social, economic, and environmental adaptations but also to broader theoretical themes that examine the nature of such developments. By addressing these issues from this perspective, a scholarly agenda is put forward that places steppe archaeology at the core of future studies that evaluate and interpret trajectories of change in the human past.

Volume Organization

Key themes that long have contributed to steppe scholarship, stretching from the Soviet period up to the years since its collapse, include the modeling of social development and change, the role of metals in early societies, physical and cultural boundaries that characterize social landscapes, and the materialization of social power through monument construction and use. These themes are also broadly interwoven within world prehistory, and each can be seen as an important consideration within regional archaeologies. Therefore, themes that have both regional and broader comparative significance were selected as foci for the contributing authors of this volume to address in their independent chapters. As such, the volume consists of 15 full-length chapters, organized into four thematic parts with introductory essays: framing complexity; mining, metallurgy, and trade; frontiers and border dynamics; and social power, monumentality, and mobility. While the individual chapters are discussed in more detail within the introductory essays, we outline here the rationale for these specific themes.

Framing Complexity

In the past, mobile pastoral communities on the steppe were thought to follow a generally homogeneous pattern of social organization. Rather than making this assumption, the authors in this first part each bring a fresh approach, combined with newly gathered evidence from their own recent fieldwork, to bear on this issue. The contributors examine various definitions and theoretical approaches to the concept of *complexity* and its relationship to observable changes in economy, technology, and social organization within their research areas.

Distinct patterns of change in the archaeological record connected with the innovation and diffusion of new technologies, the emergence of warfare and military activities, and settlement patterning and mortuary practices are discussed. In recent years, archaeological evidence has been used to examine such distinct transitions through regional survey and geographic information systems (GIS) technologies, intensive settlement and cemetery excavations, and paleoenvironmental reconstruction. Much of this research has centered on identifying changes connected with the early, middle, and late phases of the Bronze Age, dating approximately from the third to the second millennium BCE. The chapters within this part focus on the conceptual problems associated with these developments and discuss broader theoretical strategies for evaluating the external and internal stimuli that contributed to these significant changes in the archaeological record.

Mining, Metallurgy, and Trade

Scholars have known for some time that the steppe region provided abundant resources to metal producers. However, the role these populations played in the emergence and maintenance of new industries and the "values" that became associated with metals and metal objects deserve much more attention. The set of chapters in this second part focuses on the importance of metal technology and its connection with the rise of new political and economic developments in the steppe zone and neighboring territories.

The mining, production, and trade of base metals for the production of bronze and other alloys as well as final products have been evaluated through various analytical models, including core-periphery relationships, multiple-core developments, and the emergence of metallurgical provinces of interaction and exchange. Although such models have illustrated the widespread and complex nature of early metallurgy in the steppe, the chapters within this part stress the importance of testing current understandings of the nature and extent of technological diffusion, the emergence of new social organization connected with mining and production communities, and inter-regional and intra-regional strategies connected with metals trade and exchange. Important issues addressed include the structure and organization of mining communities, elite strategies for political power foundations and their connection with trade and exchange patterns, the scale of interaction and diffusion of technology between steppe and non-steppe-based polities, and the

cycling dynamics of regional prominence associated with the rise and collapse of metal production centers in the Eurasian steppe region.

Frontiers and Border Dynamics

The only written records on steppe societies to be handed down are those produced by neighboring groups to the east, west, and south of the steppe region. As a result, steppe societies have been viewed as trade partners as well as irritants to the sedentary way of life. Much has been written since these ancient accounts about the interaction between the "steppe and sown" appeared, but until recently there has been little archaeological evidence to test the claims of the ancient authors.

The group of chapters in the third part examines the dynamics and results of that interaction. While some scholars have argued for the early emergence of state-level steppe societies, others have framed these developments as "supra-tribal" or "complex chiefdoms" (Kradin 2002, 2004). In recent years, the scholarship surrounding this issue has generated several key models for examining the emergence of new steppe socio-political orders and the fluidity connected with changing patterns of cultural identity and ethnicity. Such works have re-evaluated traditional static concepts of core-periphery relationships to illuminate the dynamics of "border" and "frontier" interaction, which clearly existed. Chapters in this part, therefore, investigate archaeological evidence in order to more effectively model the emergence of new patterns of steppe social complexity and identity.

Social Power, Monumentality, and Mobility

The fourth part of the volume focuses on the modeling of early complex societies in the eastern steppe zone and includes important new research and data from Mongolia, a region that has witnessed a surge of international collaborative projects in recent years. Chapters in this part address various strategies of power and centralization used by steppe polities, novel methods for investigating regional diachronic shifts in settlement organization and complexity, and the interpretation of new patterns of monument construction and funerary ritual practices. Many of the key political, social, and economic developments that occurred among steppe societies were situated at the non-state level of organization. Such developments have commonly been framed in terms of tribal and chiefdom levels of societal complexity, as discussed in the third part.

While the investigation of such middle-range societies has been effectively investigated through the comparative analysis of sedentary agricultural-based societies around the world, much less focus has been placed on evaluating the political and economic strategies and trajectories represented by pastoralist- or agro-pastoralist-based societies. With these problems in mind, this final part of the volume critically examines monolithic models and linear trajectories that have been used conventionally to interpret the organization of steppe pastoralist and agro-pastoralist societies and offers new perspectives on evaluating their pathways toward social change.

Concluding Remarks

This volume has brought together many renowned scholars in the field of Eurasian steppe archaeology, and their contributions provide an important perspective on the vibrancy and optimism that exists within this field today and some of the challenges that lay before it. They also provide an important view on the state of the field and suggest not only where future work must be done but also what methods and theories may be particularly productive within such investigations.

The application of new scientific methods such as ancient DNA studies, bone isotope analyses, and the application of new absolute-dating chronologies are having a tremendous impact on current research programs in the region. In addition, greater cooperation among scholars from different disciplines (history, archaeology, etc.) may provide fuller, less-biased views of the human past. Coupled with this, a new generation of scholars is becoming active in larger collaborative archaeological programs. As a result of these important developments, steppe archaeology has made significant strides in the past two decades and shows every indication of being one of the most promising new territories for international research.

Nevertheless, as Colin Renfrew's discussion in the Foreword of this volume sets out, several distinct problems have been framed within the field of Eurasian steppe studies. These include the challenges surrounding the linguistic prehistory of the region, the emergence and spread of spoke-wheeled chariot technology, and the role of the horse in new patterns of social mobility and warfare. This volume stresses, rather, other questions that remain to be more fully understood and that can be productively coupled with the broader conceptual problems that continue

to challenge the study of world prehistory. These include more-nuanced understandings of the relationship between technology and social practice, more effective modeling of processes of human migration versus diffusion in technologies and ideas, and various pathways to social and economic complexity that appear to be unique within pastoralist and agro-pastoralist orientations. We hope that this volume has gone some way in identifying these problems and in suggesting new approaches to solving them.

In closing, we would like to thank all the contributors for their lively discussions during the Pittsburgh symposium and for their probing analyses in the papers presented here. We would also like to thank Beatrice Rehl at Cambridge University Press for her sincere support in the publication of this monograph and two anonymous reviewers for very thoughtful suggestions on how it could be improved. As editors of this volume, we are honored to have had the opportunity to contribute to the exciting new agenda that is emerging in the scholarship of the Eurasian steppe region and we look forward to this volume's contribution to broader comparative studies of social complexity in world prehistory.

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PART ONE

FRAMING COMPLEXITY

CHAPTER 2

Introduction

Ludmila Koryakova

In the past few years, several international conferences in the United States (e.g., Chicago 2004; Pittsburgh 2006) have focused on the problems of social complexity in the vast region of Eurasia. I remember that during my first trip to the United States in 1994, I met David Anthony, Karen Rubinson, Adam Smith, Phil Kohl, and Karlene Jones-Bley. At that time, these individuals were representative of a very small group of American archaeologists whose academic interests were directed to a better understanding of Eurasian steppe prehistory. In retrospect, it has taken some time to overcome the consequences of the long academic separation that existed between Anglo-American and Russian archaeology during the Soviet period. In recent years, the beginning of a much better understanding between scholars of these regions and broader perceptions of Eurasian archaeological materials are being realized.

Both past and recent research has shown that Eurasian prehistory represents a number of socio-cultural phenomena not only of regional but also of wider historical significance. The assessment of these phenomena, particularly the character and level of social complexity of Eurasian cultures in light of modern theoretical models, forms a rather new agenda in Eurasian studies. This volume, and the set of essays that forms part I, contribute importantly to this new orientation.

All of the chapters in the first part focus on the Bronze Age. Geographically, three of the four papers fully or partly concern the Ural mountain region (Epimakhov, Anthony, Frachetti), one paper the Caucasus (Kohl), and another also includes the Semirech'ye area of southeastern Kazakhstan (Frachetti). These regions all played an active

role in some of the most important prehistoric socio-cultural processes that occurred in Eurasia. This is well represented by the richness and diversity of the archaeological sites discussed by these authors and the important problems they focus on connected with both the emergence and development of social complexity.

The concept of social complexity, as a paradigm, undoubtedly has good heuristic potential, but as a general theory it has been limited in terms of its application to the Eurasian steppe region, especially because the traditional criteria of complexity has long been "attached" primarily to the study of settled agricultural societies.

Traditionally, the development of social systems in archaeology was predominantly regarded in terms of different variants of evolutional theory that focused on levels of civilization that, in turn, associated states with the highest level of socio-political evolution (Trigger 1998). States are often seen as the result of the competition of various social and political elements over longer-term historical change. In recent decades, however, a great deal of research has shown that, in social evolution, hierarchical societal forms had many alternatives, which often were based on large demographic parameters and developed economies that were well adapted to specific ecological environments. Often, these developments did not have clear hierarchical structures. In some cases, the rise of social complexity can be accompanied by an increase in the role of vertical social relations (strongly hierarchical), but it can be also accompanied by an increasing development of horizontal connections (heterarchy). Therefore, it has become evident that stateless societies were not necessarily less complex than state societies (Bondarenko and Korotayev 2002; Bondarenko et al. 2006: 15–18).

This shift in thought has allowed scholars to conclude that in social development at least two broad strategies are tenable: hierarchical "vertical" (chiefdoms and states) and non-hierarchical "horizontal" (communities and polities) (Popov 1993, 1995; Kradin and Lynsha 1995; Korotayev 1997; Kradin 2001). As a result, in recent years theoretical discussions of social complexity have moved away from a focus on linear evolution, political centralization, decision making, and hierarchy toward alternatives such as heterarchy (Crumley 1995) and dual social strategies (Blanton et al. 1996; Feinman 2001).

As Kristiansen and Larsson (2005: 5) have noted, "the processual and postprocessual archaeologies of the last generation have one thing in common, an autonomous perspective. The local or regional unit is their favorite frame of theoretical and interpretative reference, and academic

references consequently rarely transcend national or regional borders." These authors indicated the necessity to overcome this "regionalism," particularly by studying the process of interaction in all its forms and complexity. A similar view is sometimes visible through a number of publications emphasizing prehistoric interactions, transmissions, exchange, trade, large-scale social transformations, and networks (Harding 2000; Kohl 2007; Koryakova and Epimakhov 2007; Kristiansen and Larsson 2005; Kuz'mina 2007). On the other hand, this tendency is also accompanied by a growing interest in regional lines of development, and their comparative analysis, which has resulted in a willingness to consider societies not as isolated polities but rather as elements of larger cultural networks.

There is no doubt that the nature of complexity can be expressed in material culture differently. In this way, the concept of complexity cannot be narrowed down only to the political organization, stratification, and greater hierarchy of societies. The developed forms of rituals, mythology, art, some particular material attributes, and other cultural components can supplement and, in some cases, form the only source of information available to estimate early forms of prehistoric social complexity.

There are many examples in which poor archaeological evidence exists, and only through historical records are we able to ascertain the existence of larger complex social formations. As an example, historically known states in the Eurasian steppe and forest-steppe, such as the first Turkic Khanate (sixth century CE) and Siberian Khanate (fourteenth to fifteenth century CE), are not well represented by archaeological evidence. If we did not know about their existence from literary sources, it would not be possible to identify these societies as states, because their social power was not distinctively exhibited in material culture and because nomadic states and super-complex chiefdoms are characterized by certain observable traits.

All this serves as a background for the central theme discussed within the chapters of this first part of the volume. All of the authors stress the importance of defining and understanding various forms of prehistoric social complexity in the Eurasian steppe. For example, according to Frachetti, current archaeological models of complexity to date do not adequately fit the Bronze Age conditions evident across the Eurasian steppe zone, and many commonly cited corollaries of "complex" chiefdom- or state-level organization, such as agricultural surplus, centralized socio-political authority, and institutional mechanisms for control of

specialized production, are currently lacking in the Bronze Age archaeology of the steppe. At the same time, the archaeological data do not allow one to consider Bronze Age societies as primitive or egalitarian, as was stated not long ago in Russian archaeology, because of a whole range of indicators of socio-political complexity detected by recent discoveries in the Eurasian steppe zone. In light of this, Frachetti proposes the concept of "non-uniform complexity," which describes how institutions are codified at local scales and how widely they condition the interactive scale of heterogeneous communities. On the basis of his model, he compares the societies of three areas with different landscapes: the Trans-Urals region (Sintashta culture), Semirech'ye (eastern Kazakhstan), and the Margiana Oasis, each of which exhibited a distinctive trajectory of social, economic, and political organization at the beginning of the second millennium BCE.

Anthony presents an elegant model for the origin and decline of the Sintashta culture, an archaeological pattern that is usually regarded as an example of the emergence of early social complexity in the Eurasian steppe. Currently, twenty-two settlements of this culture with closed circular, oval, or rectangular fortifications have been discovered within a rather limited territory of about 60,000 square kilometers (Zdanovich and Batanina 2002; 2007). The Sintashta archaeological complex is characterized by very specific attributes: systemic character of settlement localizations; highly organized settlements with elaborated fortifications and sectional architectural planning; burial sites with a high concentration of the remains of sophisticated ritual practice comprising several variations in the association between human bodies and animals; and the presence of metal objects, weaponry, wheeled transport of rather advanced construction for that time, and an eclectic set of ceramics (Koryakova and Epimakhov 2007).

Anthony builds his model on such powerful factors of emerging social complexity as warfare, transport, and connections with developed centers in Central Asia. He argues that the intensification of warfare was brought on by climatic changes and declining natural resources. His chapter emphasizes important theoretical problems, such as society and climate, prehistoric warfare and its indicators, and some specific characteristics relating to the Sintashta culture itself.

It is currently known that during the Holocene there were several serious climatic changes that greatly impacted steppe societies. Paleoclimatologist V. V. Klimenko, a scholar who has systematically worked on the correlation of historical events with distinct climatic

changes, has noted that, "the history of the ancient world is extremely determined by climate" (1998: 21). Klimenko has argued that the scale of regional temperature fluctuations differs from global fluctuations by both magnitude and character. Regional fluctuations can either precede or follow broader global changes. Therefore, in dealing with micro-regional cultural situations, it is very important to investigate both broader regional and local climatic conditions (Tairov 2003). In general, the Sintashta culture coincides in time with the early subboreal aridity that took place in the Eurasian steppe around 2700/2500–1700/1600 BCE, but its effect in the Trans-Urals is not well understood and is debated (Koryakova and Epimakhov 2007). Although the absolute chronology of the Eurasian Bronze Age is being ascertained by important new dating programs (Epimakhov et al. 2005), and scholars are more confident in the general chronology of the Sintashta culture, we still desperately need a precise internal chronology in order to understand the true character of Sintashta socio-cultural dynamics. It is also not clear how and why the descendants of mobile pastoralists, who did not know settlement (the Yamnaya-culture tribes) or knew only simple open villages (the Abashevo culture), started to create large and sophisticated settlements under poor ecological conditions. This development is obviously more complex than a simple ecological crisis, and the actual role of the fortified settlements within the southeastern Urals region is far from clear.

From all the chapters presented within Part I, it is clear that the Bronze Age of Eurasia is marked by great technological, economic, and cultural innovations that dramatically intensified social life when compared to the preceding Eneolithic period. Societal conflict and wars became important attributes of Bronze Age life in the steppe zone. However, their relationship to larger patterns of trade, cultural expansion, and political networks are not presently well understood. I think that Eurasian warfare, as a social phenomenon, still remains understudied in contrast to the historical emphasis that has been placed on formal studies of weaponry.

It is commonly accepted that such a factor as the rise of metallurgy is closely linked with social complexity in both local and interregional levels. The desire to possess necessary resources for metallurgy and control over distribution of metal production inevitably leads to the formation of large informational networks, on the one hand, and competition between societies, on the other. On the basis of the known major metallurgical traditions, such as the western zone connected

with a Circumpontic origin and the eastern connected with the Seima-Turbino phenomenon, it is possible to hypothesize that in the beginning of the second millennium BCE two technological systems competed within Eurasia. Such a development provides an important area for a new range of cultural studies focusing on "globalization," which means that radical changes in material culture were also linked to changing social identities that occured in macro-regional phases of interaction – perhaps, in a sense, reminiscent of processes connected with contemporary globalization. Critical issues include the dichotomous relationship between brief time scales of rapid change in which new kinds of material culture, ideas, and technological knowledge spread over vast areas contrasting with long periods in which culture and society appear to be localized, persistent, repetitive, and marked by a routine character (Vandkilde 2004). The examination of the processes connected with short-term change and long-term continuity will help scholars to develop better models for understanding dynamic interaction between local strategies and global processes as well as the concept of "world-systems," if one uses the less rigid criteria of "informational networks" of interaction in such systems, as proposed by Chase-Dunn and Hall (1997). The latest research testifies to the invention and spread of the chariot complex within the Eurasian steppe in the early second millennium BCE. The studies of such phenomena perhaps can serve as important examples of such processes (see Anthony's and Epimakhov's chapters). In this case, acceptance of a chronological priority for the Eurasian spoke-wheeled chariot over the Near Eastern one will require that scholars revise conventional interpretations of prehistoric interactions between urban areas and what has been viewed as the steppe periphery.

Although such interactions in the Iron Age appear more clearly, this cannot be said of the Bronze Age. This theme is touched on in Kohl's chapter, which is devoted to an assessment of the Maikop cultural phenomenon. Despite its enigmatic character, the Maikop is undoubtedly responsible for "maturation" in Circumpontic techno-cultural networks, wherein the Maikop development played the role of a "center" during the second half of the fourth millennium BCE. Some elements of its heritage likely were transmitted to the north and northeast and into the steppe zone. In this respect, the Maikop and Sintashta cultures are comparable in terms of their singularity of development, which became an important foundation for later social, cultural, and technological patterns in the steppe region.

In conclusion, I would like to stress that the chapters in this first part highlight a range of important issues and provide a set of interesting interpretations and intriguing hypotheses, which help us to expand our current perception of the early social complexity of Eurasian steppe cultures.

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CHAPTER 3

Differentiated Landscapes and Non-uniform Complexity among Bronze Age Societies of the Eurasian Steppe

Michael D. Frachetti

Differentiated Eurasian Landscapes

Archaeological research increasingly illustrates that Bronze Age societies of the Eurasian steppe were inherently more diverse in their ways of life than their related material culture might imply (D. Zdanovich 1997; Kosintsev 2001; Nelin 2000; Epimakhov 2003). Bronze Age steppe communities illustrate comparatively different scales of social, economic, and political organization, as well as local variability in their extents of mobility and geographic ranges of interaction (e.g., Anthony et al. 2005; Chernykh 2004; Shishlina 2003; Frachetti 2008a). Even in local settings, evidence suggests that Bronze Age steppe communities were organizationally heterogeneous – meaning they were not politically or economically centralized under a shared corpus of functional institutions. Yet widespread distribution of related forms of material culture has prompted archaeologists to define an expansive cultural community through the broad lens of culture history and economic interaction throughout the second millennium BCE. One may observe that the emergence of a seemingly extensive socio-economic landscape throughout the Bronze Age stands at odds with the organizationally small-scale and locally rooted societies that occupied this vast territory. Current archaeological models of social complexity to date do not adequately fit the Bronze Age conditions evident across the Eurasian steppe zone (see Koryakova 2002). The apparent disjuncture between the scale of socio-political institutions of steppe populations and the geographic extent of their functional economic arena provides

a unique case for the investigation of alternative models of interaction and social complexity among regional communities.

Models of Mesopotamian organizational dynamics define complexity as "the degree of functional differentiation among societal units or subsystems" (Rothman 1994: 4). This definition is fitting for Mesopotamia, because there is an ascertainable "societal" framework from which "units" or "sub-systems" may be derived (Stein 1994: 13). Archaeological signatures of a diverse yet integrated society were generated through an emerging world system of economic and social transactions, such as surplus exchange, specialized production, resource management, and bureaucratic management, which drew the region's populations into institutionally structured chiefdoms and states through time (Algaze 2001; *generally*, Stein and Rothman 1994). Rothman (1994: 4) has suggested that in this setting complexity is rooted in societal organization, which he defines as "the arrangements that structure the functioning of individuals and groups as they attempt to meet social, economic, political, or ideological needs." This definition reflects what new-institutional economists like Douglass North call "institutions."[1] Merging these terminologies suggests that greater complexity comes with a wider applicable scale of institutional forces; a larger diversity of "functional units" can be organized in relation to one another through a common set of institutional constraints. Such a metric for qualifying and quantifying complexity is useful in Mesopotamian contexts and has been adapted in various forms to describe myriad other archaeological examples, ranging from the emergence of archaic states to the structuring of complex economic and social frameworks among chiefdoms of various forms (Carneiro 1970; Blanton et al. 1996; Earle 1977; for discussion, Chapman 2003).

But what if one cannot easily circumscribe the geographic boundaries of the participant communities or locate the growth of a shared or consistent institutional framework that applies to different populations intersecting across a shared geography? Socio-political or economic complexity cannot be charted as easily on a "functional scale of differentiation" if the societies that co-generate it subscribe to independent institutional parameters or exhibit non-uniform definitions of general institutions to begin with. In place of such models, I propose a theory of non-uniform complexity that builds from North's definition of institutions in order to chart institutional heterogeneity, consolidation, and fragmentation. This model supplies a useful metric for describing complexity among differentiated populations that nonetheless interact across a common geography.

For the purpose of this study, I employ North's definition of institutions as "the humanly defined constraints that shape human interaction" (1990: 3). These constraints can be informal or formal, but for the scope of this discussion we are primarily concerned with informal institutional constraints.[2] From the perspective of Bronze Age steppe archaeology, we may further identify specific and general institutions. Specific institutions refer to culturally particular practices, such as specific taboos or certain practices that constrain behavior among discrete in-groups. For example, David Anthony describes a case of Bronze Age dog sacrifice at Krasnosamarskoe, which, although potentially part of a wider ideological treatment of dogs, is evidence of a specific institution that conditioned how that particular community behaved in a particular contextual setting (Anthony et al. 2005: 412–413). General institutions are conceived here as categorically broader constraints, such as trade parameters, building conventions, ideological symbology, or even human burial. These institutions reflect common currents that crosscut communities but are uniquely transformed by diverse groups given their individual motivations or vantage point (e.g., Freidel 1983). The rules of engagement for trade, for example, may be considerably differentiated between two participant groups, even though, functionally speaking, economic transactions may be carried out with mutually perceived success. Anyone who has shopped in a foreign market has experienced the often disparate expectations and assessments of relative value and client-agent responsibility that surface from the non-uniform institutional frame of reference that shapes such encounters. It is important to distinguish specific and general institutions because one might expect that different societies will have different specific institutions, but, as in the Mesopotamian examples cited previously, societal boundaries are commonly defined by the degree of identifiable homology in general institutions. Although complexity is typically predicated upon the establishment of durable and codified institutional frames,[3] I suggest that the range of institutional constraints that shaped Bronze Age interactions on the steppe reflects a non-uniform degree of parity among related or neighboring groups. Non-uniformity is the result of some general institutional codes being homogenized between diverse groups or re-shaped among them for strategic purposes, while other institutions remain individually or specifically defined (Fig. 3.1). Thus, for each participant community, its degree of organizational consolidation or fragmentation vis-à-vis its neighbors depends on the scalar cohesion of various institutional structures and the periodic willingness of those communities to

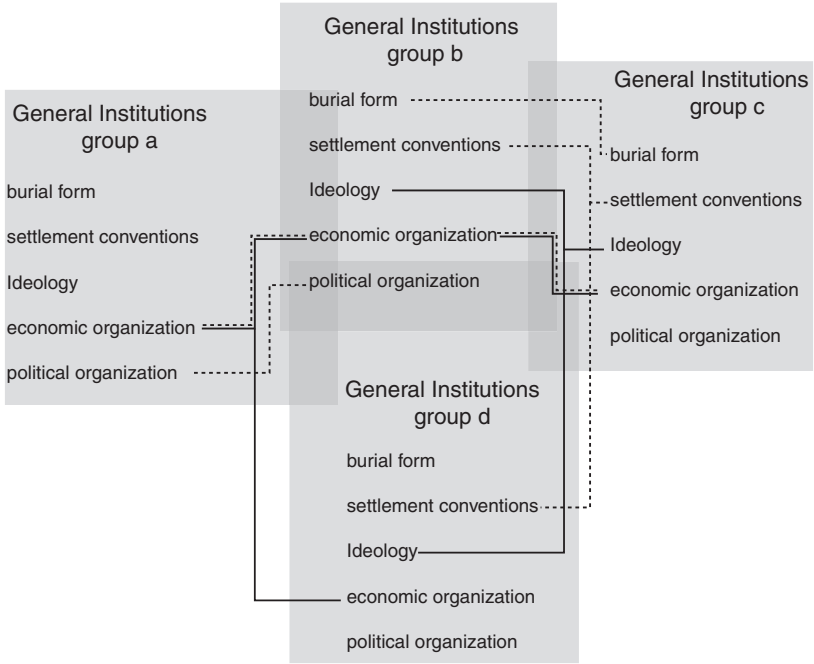

Figure 3.1. Conceptual model illustrating non-uniform complexity and periodic extent of geographic overlap among four hypothetical neighboring communities. Lines indicate institutional cohesion at period 1 (*solid*) and period 2 (dashed).

adopt or develop similar constraints to their modes of interaction. As such, the degree of "complexity" for different Bronze Age steppe communities cannot be assessed as a societal whole, because their degree of institutional cohesion may be temporarily connected and organized in some aspects, while diverse and at odds in others. The social complexity of settled prehistoric agricultural societies of the Near East, Asia, and the Mediterranean is often assessed in terms of the durability of institutions over temporal and geographic scales. Complexity among steppe communities is better evaluated in terms of institutional integration or fragmentation at the interstices of diverse populations whose economic and political interests co-exist geographically but are not necessarily bound by a shared sense of society.

In the case studies presented here, I suggest that institutions were transmutable for strategically flexible pastoralists, meaning they were periodically reformed according to a number of changing contextual