

17TH INTERNATIONAL İSTANBUL SCIENTIFIC RESEARCH CONGRESS PROCEEDINGS BOOK

SEPTEMBER 28-30, 2025 | İSTANBUL, TÜRKİYE

PARTICIPATION FROM
25 DIFFERENT COUNTRIES



EDITORS:
PROF. DR. REX S. PAJENADO
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SEPTEMBER 28-30, 2025

ONLINE & IN-PERSON PARTICIPATION

ZOOM & ISTANBUL, TURKIYE

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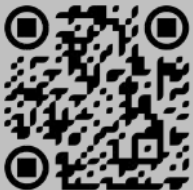
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| 12 ⁰⁰ -12 ¹⁵ | Coşkun KUMRU | <i>Pamukkale University, Türkiye</i> | FROM UYGHUR JADIDISM TO THE KASHGAR EAST TURKESTAN REPUBLIC: IDEOLOGICAL AND SOCIAL FOUNDATIONS |
| 12 ¹⁵ -12 ³⁰ | Seyhan PULLUKÇU | <i>Fatih İslam Seçen Science and Art Center, Türkiye</i> | OCCUPATIONAL STRUCTURE OF HAYRABOLU DISTRICT IN 1844: AN ANALYSIS OF TEMETTUÂT REGISTERS |
| 12 ³⁰ -12 ⁴⁵ | Gizem DOĞAN | <i>Dokuz Eylül University, Türkiye</i> | THE ACTIVITIES OF HÜSEYİN HÜSNÜ EMİR ERKİLET DURING THE SECOND WORLD WAR |
| 12 ⁴⁵ -13 ⁰⁰ | Recep ÇELİK Mustafa Edip ÇELİK | <i>Kahramanmaraş Sütçü İmam University, Türkiye</i> | AN ASSESSMENT OF JOSIP BROZ TITO'S VISITS TO TURKEY |
| 13 ⁰⁰ -13 ¹⁵ | Serap TAŞTEKİN | <i>Selçuk University, Türkiye</i> | AN EVALUATION OF AHMED ŞUAYB'S PERSPECTIVE ON MINING AND MINING LAW IN THE CONTEXT OF OTTOMAN MINING REGULATIONS |
| 13 ¹⁵ -13 ³⁰ | Nilgün DEMİRCAN | <i>Bartın University, Türkiye</i> | FIQHI AND PENAL EVALUATION OF THE ACT OF DISINFORMATION IN ISLAMIC LAW |
| 13 ³⁰ -13 ⁴⁵ | Serkan OĞUZ Selim Hilmi ÖZKAN | <i>Yıldız Technical University, Türkiye</i> | BALKAN MIGRATION IN THE LIGHT OF THE MEMORIES OF AN EXCHANGE |
| 13 ⁴⁵ -14 ⁰⁰ | Bulbul SIRAZHEVA | <i>Istanbul University, Türkiye</i> | SIGN SYSTEM IN THE CULTURES OF THE EARLY IRON AGE OF THE KAZAKH ALTAI |

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SIGN SYSTEM IN THE CULTURES OF THE EARLY IRON AGE OF THE KAZAKH ALTAI

Bulbul Sirazheva^{1*,2}

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ABSTRACT

In recent years, the Presidents of Turkey and Kazakhstan have prioritized cooperation in history, culture, and science, with particular emphasis on the exchange of knowledge and joint research initiatives. The ancient heritage of the Altai, recognized as the “Golden Cradle of the Turkic World,” is regarded as a shared cultural legacy of the Turkic community. Within this framework, the Berel Historical and Cultural Museum-Reserve is implementing the scientific program “BR22082478 – Sign system in the cultures of the Early Iron Age of the Kazakh Altai.” The program aims to investigate the role of signs and symbols in Early Iron Age cultures, reconstruct the historical and cultural environment, trace the continuity of symbolic traditions, and situate the Kazakh Altai sign system within the broader heritage of Central Eurasia.

The research involves a full cycle: archaeological fieldwork, documentation and classification of sites, creation of an electronic database of monuments bearing ancient signs and symbols, and the development of methodological guidelines for the study of movable and immovable heritage with symbolic markers. Beyond generating new scientific data, the project fosters interstate collaboration in the humanities and strengthens cultural dialogue between Kazakhstan and Turkey. This article presents the main stages of the program’s implementation, the research activities undertaken, and the scientific outcomes achieved.

Keywords: Kazakh Altai; early iron age; sign system; signs; symbols.

INTRODUCTION

The Kazakh Altai, regarded as an integral part of the ancient nomadic civilization of Eurasia, holds outstanding archaeological, historical, and cultural significance. During the Early Iron Age (1st millennium BCE), this region became one of the major cultural crossroads of the steppe world. It was a space where mythological conceptions, sacred structures, and social stratification contributed to the emergence of complex visual and symbolic systems.

Signs and symbols occupied a special place in the worldview of ancient nomads. They were not limited to decorative or utilitarian functions but acted as communicative codes with profound cosmological, ideological, and social meaning. Such symbols served as markers of sacred space, instruments of legitimizing authority, indicators of social status, and visual codes representing the structure of the universe.

The study of these symbolic systems makes it possible to reconstruct the historical and cultural environment of the Early Iron Age, to trace the continuity of traditions, and to determine the place of the Kazakh Altai within the broader cultural heritage of Central Eurasia. Particular importance is attached to the typology of sign structures, their semantic interpretation, and the identification of regional features and localized complexes. These aspects reveal the role of symbols in social phenomena such as power, property, and status, as well as their connection to mythological concepts and ritual practices.

Methodologically, research in this field draws upon archaeology, visual anthropology, historical semiotics, traceology, and comparative-typological analysis, supplemented by contextual approaches. The empirical base includes petroglyphic complexes and other archaeological sites of East Kazakhstan, especially those located in the Ulan, Tarbagatai, Katon-Karagay, and Kurchum districts.

Preliminary results show that cupules can be interpreted as proto-signs, animal-style art reflects mythological and cosmological ideas, and visual codes conveyed social stratification. The spatial and temporal organization of symbolic complexes illustrates how ancient nomads encoded their worldview in visual form.

Thus, the investigation of sign systems in the Early Iron Age cultures of the Kazakh Altai provides new insights into the semiotic culture, sacred worldview, and social relations of early nomadic societies.

MATERIALS AND METHODS

In archaeology, a sign system denotes a set of stable visual or material forms used for communication, identification, and symbolic expression. It includes symbols, pictograms, ornamental motifs, and glyphs. Beyond functional elements such as tribal tamgas, sign systems also comprise symbolic imagery – solar motifs, predatory attack scenes, and totemic animals. Some elements function as proto-signs: elementary shapes without fully developed semantic codes, yet meaningful within collective practices. These represent an early form of visual communication and a key component of visual culture.

The analysis of such signs requires interdisciplinary methods. Semiotic approaches (Yu. Lotman, C. Peirce) interpret them as cultural codes, while structural analysis (C. Lévi-Strauss) highlights binary oppositions and mythological structures (Lotman, 1987; Peirce, 2000; Levi-Strauss, 2001). Visual anthropology views imagery as a medium of ideological representation – of power, sacrality, or

corporeality. Contextual archaeological analysis investigates spatial placement, production techniques, and associations with other finds. Traceology identifies tools and stages of execution, and comparative-typological analysis situates local traditions within broader macro-regional contexts, including the Scytho-Saka and Turkic-Mongol cultural spheres.

Functionally, signs may be grouped into several categories: identificational (tribal, clan, and personal tamgas); sacral (solar motifs, circles, ritual symbols); communicative (directional and territorial markers); mythological and ideological (predatory attack scenes, anthropomorphic and zoomorphic figures, totems); and technical or economic (craft marks, notches, and incisions). To avoid ambiguity, the following distinctions are maintained: sign denotes a meaningful visual form; symbol, an abstract or sacred sign; pictogram, an easily recognizable image; proto-sign, an elementary form such as cupules or circles; and tamga, a marker of ownership or tribal identity.

At the same time, interpretation faces limitations: the absence of written explanations, the destruction of original cultural contexts, and the polysemy of signs, which may simultaneously carry sacral, tribal, and technical functions. A further challenge is the risk of projecting later meanings – such as attributing Turkic tamgas to the Scythian era.

Fieldwork at complex sites like Sartynbet and Akbaury integrates several methods. Contextual recording employs photographic documentation, GPS coordinates, and stratigraphic observation. Traceological and digital analyses refine data through tool identification, contour tracing, and 3D modeling. Comparative analysis then establishes patterns of recurrence and variability within and across sites.

This integrated methodology enables the systematic interpretation of the cultural, social, and symbolic dimensions of Early Iron Age sign systems in the Kazakh Altai.

RESULTS

As part of the present research, a digital database of monuments from the Kazakh Altai bearing ancient tamga-like signs and symbols was developed. For this purpose, from the archival collection of the A. Kh. Margulan Institute of Archaeology containing 3,572 scientific reports, fifty-two reports specifically devoted to the study of Early Iron Age monuments in East Kazakhstan were selected. In addition, archival field reports and publications of leading scholars who investigated archaeological monuments of East Kazakhstan at different times were examined, including those of S. S. Chernikov (1935), S. S. Sorokin (1959), F. Kh. Arslanova (1970, 1984), Z. S. Samashev (1987–present), G. A. Kushch (1990–1991), A. A. Tkachev (1992–1997), and V. V. Kolbin (1997).

Based on these sources, a program of reconnaissance and analytical fieldwork was carried out, which resulted in the formation of a comprehensive database on monuments dated to the beginning of the 1st millennium BC that contain depictions of signs and symbols. The database includes geographical coordinates and visual descriptions of immovable archaeological sites located in the Ulan, Tarbagatai,

Katon-Karagay, and Kurchum districts of East Kazakhstan, where tamga-like signs have been documented.

The completed database is hosted on the official website of the Berel State Historical and Cultural Museum-Reserve (<https://berel-museum.kz>) and is accessible in three languages: Mälimetter bazasy (Kazakh), Baza dannyx (Russian), and Data base (English). Alongside textual and cartographic information, the database presents scientific digital copies obtained using modern recording techniques, including photogrammetry, traceological analysis, and other visualization technologies.

The systematization of materials on monuments containing tamga-like signs has thus been finalized. A methodological recommendation, designed to guide further study of movable and immovable monuments with symbolic markers, has been prepared and published on the official website of the Berel Museum. This document provides a set of scientifically grounded and practically effective approaches for investigating the sign system of the ancient nomads of the Kazakh Altai. The recommendations are based on both domestic and international achievements in archaeological research, as well as field and laboratory experience accumulated in the region.

The methodological guidelines emphasize methods of field and chamber documentation, semantic and contextual analysis, classification and typology of signs, and the interpretation of their social, legal, and sacral functions in nomadic societies. They are intended for specialists in archaeology, history, and ethnology, as well as researchers interested in the cultural heritage and sign systems of nomadic civilizations.

From a historical-cultural perspective, the study reveals that the first half of the 1st millennium BC was marked by large-scale social, economic, and cultural transformations in the steppe regions of Eurasia. These changes, associated with the transition to nomadic pastoralism, the emergence of early state structures, and the militarization of society, were accompanied by a renewal of worldview, the development of a new visual language, and a reconfiguration of the sign system.

Within this visual repertoire, central importance was given to the armed warrior – an ancestral figure symbolizing both the sacral and social identity of clans and tribes. Equally significant was the image of the horse, interpreted as a solar and mediating symbol of motion, sacrifice, and passage between worlds. The depiction of the noble deer held special totemic value, serving as a symbol of cosmic order and purity. Its branched antlers, associated with world tree mythologems and sacral initiation rites, were understood as attributes of solar and cosmic power. Such images were widespread on burial goods, cult equipment, shamanic masks, horse harnesses, inlays, and decorative objects.

Another essential component of the visual system was the motif of animal combat and predatory attack. These scenes, representing confrontations between equally powerful beings (boars, bears, camels, etc.), visualized myths of creation, rites of renewal, and seasonal cycles. The compositions

were enriched with spirals, meanders, solar circles, and selective signs, reflecting the multilayered mythopoetic worldview and its ties to totemic, astral, and solar cults.

Alongside real and totemic animals, hybrid creatures with features of birds, ungulates, serpents, and predators also appear. These liminal beings symbolized transitional states, marked boundaries between worlds, and indicated the vertical sacral hierarchy of space.

The main scientific outcomes of this research can be summarized as follows:

- The imagery from monuments of the Kazakh Altai dated to the beginning of the 1st millennium BC constitutes a coherent visual-communicative system that functioned as a means of sacral marking of space, identity construction, social stratification, and representation of power.
- Typological analysis revealed stable groups of signs: solar circles, proto-signs, scenes of predatory attack, depictions of totemic animals, cup-shaped depressions, and early forms of clan tamgas.
- The spatial placement of images (rock surfaces, caves, sacral zones) indicates their ritual use. Specific techniques of execution were identified, including pecking, incision, and polishing.
- The visual language contained mythological plots – hunting, predatory attack, and shamanic scenes – that disclose collective conceptions of time, sacral hierarchy, and the cosmos.
- The gradual transition from pictographic depictions to proto-signs and further to clan tamgas demonstrates the emergence of a stable visual code that later became the foundation of the Turkic sign system.

DISCUSSION

The visual system of the Early Iron Age in the Kazakh Altai reflects a profound transformation of symbolic and ideological codes that paralleled broader socio-economic and cultural shifts of the first half of the 1st millennium BCE. The transition to nomadic pastoralism, the emergence of early state structures, and the increasing militarization of social life determined not only the external forms of material culture but also the semiotic and mythological foundations embedded in artistic expression.

The new iconographic repertoire marked a clear departure from archaic agrarian fertility cults. Erotic, solar, and fertility-related motifs gave way to images centered on violence, conflict, and dynamic movement (Goryaev, 1998). This reorientation toward a mobile, martial worldview is evident in the dominance of figures of armed warriors, predators, swift animals, and hybrid creatures that combined features of several species. These images functioned as encoded signs of strength, victory, and power, while also operating as mediators between the human and spiritual domains.

The warrior figure acquired particular prominence in this visual paradigm. Depicted as armed, protected, and idealized, it embodied the collective archetype of the *batyr-baba* – a heroic ancestor whose presence structured both mythological narratives and the symbolic legitimization of power.

Alongside this, the horse assumed a pivotal role in the symbolic system. As a sacred animal linked with the sun, it became a sign of swiftness, sacrifice, and mediation between worlds. Yet, despite its cultural importance, the mounted rider remained secondary to zoomorphic symbolism, as the latter retained deeper and more multi-layered meanings in collective mythology (Gryaznov, 1961).

The images of the saiga antelope and the stag became emblematic of the nomadic world, encoding ideas of sacrifice, purity, light, and cosmic order. Antlers, in particular, carried multiple layers of significance: not only signs of power and strength, but also metaphors of the world tree, ladders to the heavens, and solar-cosmic attributes connected to shamanic initiation. Such motifs were widely used in ritual paraphernalia – shamanic headdresses, horse masks, funerary ornaments – and permeated decorative-applied art forms such as embossing, applique, chasing, and carving. These were not mere ornaments but sacred signs with protective and mediatory functions (Samashev, 2010).

Predator–prey compositions, motifs of animal combat, and scenes of carnivores attacking ungulates or duels between equals (e.g., camels, boars, bears) reflect dualistic cosmologies: the cyclical change of seasons, the struggle between life and death, and the balance of natural forces (Polidovich, 2006). Mythological interpretation frames these as cosmogonic acts or sacrificial rituals. In this context, the predator becomes not only a destructive figure but also an instrument of cosmic renewal – facilitating transitions, rebirth, and the restoration of universal order.

Certain compositions reveal a heightened level of symbolic density. Alongside animal images, spirals, whorls, and other abstract signs appear, interpreted as symbols of celestial connection or divine chosenness (Kuzmina, 1976). These layers of imagery demonstrate the complexity of mythopoetic thought, where totemism, solar worship, and astronomical calendrical systems intertwine. Scholars have also suggested that “predatory attack” motifs may encode metaphors of the spring equinox or shifts in zodiacal ages, possibly influenced by Near Eastern traditions (Korolkova, 2006).

The appearance of fantastic hybrid beings – creatures combining avian, hoofed, predatory, and reptilian traits – adds further tension and ambiguity. Such images marked liminal spaces, thresholds between worlds, and states of transformation. Closely tied to shamanic practices, they replicated cosmological structures in ritual performance, expressing vertical movement through cosmic layers.

Thus, the artistic heritage of the Early Iron Age represents a transformation in visual thinking shaped by the socio-cultural changes of nomadic society. The symbolic repertoire conveyed complex ideas about the cosmos, authority, time, and the cycle of life and death. These images functioned not merely as decorative motifs but as a system of sacred communication, encoding collective memory and reinforcing ethnocultural identity.

CONCLUSION

The investigation of the sign system in the Early Iron Age cultures of the Kazakh Altai has demonstrated that visual and symbolic communication was an essential component of nomadic

worldview, identity, and social organization. Far from being mere decorative motifs, signs and symbols functioned as sacred and ideological codes, mediating between the material and spiritual spheres, encoding cosmological structures, and legitimizing social order.

The systematic documentation and analysis of tamga-like forms, proto-signs, zoomorphic imagery, and mythological scenes revealed their role in marking space, articulating collective memory, and expressing social stratification. The evidence shows a gradual evolution from simple cupules and pictographic representations toward structured proto-signs and clan tamgas, foreshadowing the later fully developed Turkic sign tradition. The recurrent motifs of warriors, horses, deer, predator–prey confrontations, and hybrid creatures demonstrate a coherent mythopoetic repertoire that embodied ideas of cosmic order, transformation, and renewal.

The integration of archaeological fieldwork, traceological analysis, and digital documentation within the framework of the Berel Museum program has produced not only a multilingual electronic database but also methodological guidelines for the study of symbolic markers. These results create a foundation for further interdisciplinary research that connects archaeology, semiotics, and visual anthropology.

From a broader perspective, the study underscores the significance of the Kazakh Altai as a cultural and symbolic crossroads of Eurasia. By situating the Altai sign system within the continuum of Scytho-Saka and early Turkic traditions, it becomes possible to trace the deep historical roots of nomadic semiotic culture. The findings contribute both to the scientific understanding of early steppe societies and to the preservation and promotion of their intangible heritage.

Ultimately, the sign systems of the Early Iron Age nomads of the Kazakh Altai embody a visual language through which ancient communities expressed their relationship to the cosmos, power, and identity. Their study enriches our comprehension of how symbolic communication shaped the worldview and cultural legacy of the steppe civilizations of Central Eurasia.

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