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### Original Research Article

## Explanation of the Boundaries of the Middle Bronze Age in Northeastern and Eastern Iran Based on Archaeological Studies of the Bactria-Margiana Culture\*

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### Abstract

Attempting to delineate the western borders and boundaries of the Bactria-Margiana culture in northeastern and eastern Iran is one of the ways to understand the structure of this cultural period. The Bactria-Margiana culture is the predominant culture of the Middle and Late Bronze Age in Khorasan. This culture, abbreviated as BMAC, developed and spread from the mid-third millennium to the late second millennium BC in the geographical areas of northern Afghanistan, southern Turkmenistan, southern Uzbekistan, and eastern and northeastern Iran. The extent of the influence of this culture in eastern Iran has reached the provinces of North Khorasan, Razavi Khorasan, and South Khorasan. Delineating the borders of this culture contributes significantly to mapping the geographical boundaries of cultural Khorasan, identifying the cultural extent, and distinguishing and differentiating between archaeological materials and findings in contact areas. The main issue of this research is to determine the boundaries of the Bactria-Margiana culture in the Khorasan provinces (North, Razavi, and South) of Iran. Based on this, the following questions were raised: 1- Which areas are included within the sphere of influence of the Bactria-Margiana culture in Khorasan? 2- How can the presence of the Bactria-Margiana culture in Khorasan be explained? The method of this research is descriptive and analytical, and it involves library studies. The research results indicate that this culture has somewhat infiltrated parts of Khorasan in Iran, manifesting as settlements in North Khorasan and Razavi Khorasan and as cemeteries in South Khorasan.

**Keywords:** *Archaeology, Northeastern and Eastern Iran, Bactria-Margiana culture, Bronze Age, Cultural Boundary.*

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## Introduction

Khorasan encompasses parts of the northeast (North Khorasan and Khorasan Razavi provinces) and east of Iran (South Khorasan province). Due to its location between different cultural areas (Namazgah in the north, Sistan and Kerman in the south, Afghanistan in the east, and the center of the plateau in the west), Khorasan has a special importance and position in terms of understanding ancient cultures in the eastern half of Iran. On the other hand, studying this region plays an effective role in the process of understanding the connections and interactions between the aforementioned cultural areas. Unfortunately, despite this importance, few archaeological studies and research have been conducted in this region so far, and archaeological research, especially studies related to the BMAC culture, is still in its infancy. In most parts of this province, no targeted and scientific archaeological survey has been carried out so far. In the eastern half of Iran, we are faced with two different categories of representations of objects and works of the BMAC culture in the region as follows:

**Sites and settlements of the BMAC culture:** These sites can be identified mostly in northeastern Iran, the northern half of Khorasan Razavi Province, and the eastern half of North Khorasan Province. In these sites, ancient layers related to the BMAC culture, graves, and in some cases, industrial areas can be identified. These areas are considered part of the geographical extent of the BMAC culture.

**Cemeteries of the BMAC culture:** In these cases, which are mostly visible in southern Khorasan and western North Khorasan Province, "Jajarm County", only graves related to this culture have been identified so far. Given the limitations of archaeological excavations and research and the small amount of information, it is currently not possible to provide any correct interpretation of why these graves exist.

## Research Background

No independent research has been conducted so far regarding the areas under the influence, borders, and boundaries of the BMAC culture in Khorasan, but in general, surveys and excavations have been conducted in the provinces of North, Razavi, and South Khorasan in connection with the identification of this culture.

**Khorasan Razavi:** During the Metropolitan Museum's excavations in Nishapur in the 1940s, Hauser reported on a prehistoric site in Nishapur (Dimand et al., 1938, 4). This ancient settlement is located 12 km northwest of the old city of Nishapur. Wilkinson named this settlement Nishapur P, which is now called YusufAbad. Based on pottery finds in this settlement, artifacts and evidence from the Chalcolithic, Bronze and Early Iron Ages (Namazga I to Yaz I) have been found (Hiebert & Dyson, 2002, 24). In 1369 AH, while digging a well in an industrial complex, in the village of Karimabad, Neyshabur city, at a depth of 3 to 3.8 meters, these objects and artifacts were identified and discovered: 4 metal pieces (silver), 22 carved stones in the shapes of cylinders, spheres, cones and incomplete cones, 3 clay vessels and 1 composite BMAC figurine (Labaf Khaniki, 2002, 36-37). The similarity of these found pottery with the types and samples of pottery of the BMAC culture, and most importantly, the discovery and appearance of the Bactria figurine among the found and identified artifacts, indicates that this collection, located 8 kilometers from the old city of Neyshabur, belongs to a cemetery or settlement related to the BMAC culture. During scattered archaeological surveys and studies in northeastern Iran, pottery types of the BMAC culture have been found in the Frizi Hill of Sabzevar (Sabori et al., 2015, 91-111), the Naderi Hill of Mashhad, and the Yarim Hill of Dargaz (Sheikh, 2014).

**North Khorasan:** A joint French-Iranian survey

team led by Ali Akbar Vahdati conducted archaeological excavations in the Damghani Hill of Sabzevar in 2008 and surveyed the surrounding area (Vahdati & Frankfort, 2010, 17). Archaeological findings from different parts of this hill indicate the richness and abundance of artifacts and objects from the Chalcolithic, Bronze, and Iron Ages (Yaz II, III) in the Damghani Hill of Sabzevar (Frankfort et al., 2014, 120). Pottery has been found to belong to BMAC culture. This type of pottery has been identified and found from the IV period of Damghani Hill and also from the surface of the site (*ibid.*, 130). In addition, fragments of marble stone vessels were identified and discovered on the surface of the hill, which are similar to the examples found on the IIIC wall (Vahdati & Frankfort, 2010, 29-30). Archaeological research in the area of Firuzeh Town in Neyshabur was conducted from 2009 to 2013 during four seasons by the Archaeology Department of Neyshabur University under the supervision of Basafa & Rahmati (2012, 614). A joint delegation of the Cultural Heritage of North Khorasan Province and Italian archaeologists, led by Ali Akbar Vahdati, began excavating the Chelo site in 2011, which, in addition to identifying two parts: a cemetery and a settlement, resulted in the discovery of layers related to the Neolithic period up to the late Bronze Age in this site. During these excavations, graves, and artifacts related to the BMA culture were also identified and discovered (Biscione & Vahdati, 2012, 237-236; Vahdati, 2015). During excavation operations in the southern part of Eshgh Hill in 1390 AH, burial remains were found, and it was revealed that, based on pottery vessels and other evidence obtained, they belong to the BMAC culture period. Among the most important and other features of this burial found in Tepe Eshgh are the remains and traces of the burial of a dog along with the body, characteristic BMAC pottery, and a bronze dagger handle. This

Tepe Eshgh burial is comparable to the burials excavated in the Gunur Tepe cemetery located in southern Turkmenistan. It is important to note that, according to archaeological findings and evidence, the first population and human groups settled and resided in the Bojnourd plain during the BMAC culture period (Vahdati, 2014, 19-27). Jiran Tepe is located about 15 kilometers southwest of Esfarayen city and consists of two short and large elevations that are formed in a north-south direction; together they cover an area of about 2 hectares. The northern elevation is four meters high and on its surface layer, gray pottery of the Gorgan Plain, Iron Age pottery (Yaz I, gray pottery of Archaic Dehestan), and pottery of the BMAC culture are visible. Excavations at this site were conducted in 2012 under the supervision of Ali Akbar Vahdati. During these excavations, graves, and architecture from the Iron Age were identified and found. In addition, pottery from the BMAC culture was found on the hill and in the surface layers of trenches 1 and 3 (Biscione & Vahdati, 2012).

South Khorasan: The history of information, studies, identification, and discoveries of the BMAC culture in the current political area and border of South Khorasan dates back less than a decade. Studies and research by archaeologists and their work in relation to the presence and spread of the BMAC culture in the southern part of Khorasan province are still in their early stages and at the beginning of their journey, and so far only a handful of cemeteries and settlements of this culture have been investigated, studied, identified and excavated, among which we can mention the Ferdows Garden Cemetery, the Bakanda Cemetery of Tabas (Farjami, 2015, 21) and the Rازه Darmin site (Soroush & Yousefi, 2014, 271-273). Farjami considers the Bakanda cemetery of Tabas to be of the BMAC culture based on the identification of surface pottery (*ibid.*, 11). The published photographs and drawings of the pottery

assemblage of the Bakanda cemetery of Tabas, while confirming the accuracy and correctness of his theories, show the spread of this culture in the southwestern end of Greater Khorasan and on the edge of the central desert of Iran. The Razeh site is located in a village of the same name in Darmin County, South Khorasan Province. The Fakhrud River flows near this village. When determining the area and boundaries of this site in 2012, a large number of pottery belonging to the BMAC culture and two burials were identified and discovered (*ibid.*, 272). In addition to these artifacts, a number of pottery vessels of the BMAC culture and two miniature columns are among the other artifacts and objects that were identified and discovered during agricultural activities or unauthorized excavations. The Gavand Baghestan cemetery is located twenty kilometers north of Ferdows city and one kilometer west of Baghestan Olya village (Farjami, 2015, 4). One kilometer east of this site is the Sartakht Baghestan site, which dates back to the Neolithic and Chalcolithic eras (Dana, 2015). In 2015, Mohammad Farjami determined the area and boundaries of the Gavand cemetery (Farjami, 2015, 10). From this cemetery, significant pottery of the BMAC culture, several Bactria figurines, and part of a miniature column, which is among the significant works of this culture, have been discovered (*ibid.*, 19-24). The Bakanda site of Tabas is another site located at the westernmost point of South Khorasan Province, on the edge of the desert. This site was recently speculated and investigated by Anani & Irvani Ghadim (2021, 178). and it appears to be a cemetery belonging to the BMAC culture. It is important to note that no settlement or site has been discovered near or around this cemetery. Evidence and data found are from the main mound surface in the northern and central parts. In general, data and artifacts obtained from Bakanda include bronze arrowheads, agate beads, pottery, and marble

vessels. The climatic diversity and the vastness of the geographical area under discussion and study (Central Asia and northeastern Iran) are considered one of the main obstacles in examining cultural continuity in this region.

The main weakness of the research conducted in Greater Khorasan is the focus on the results of excavations or surveys of sites and monographs, and this culture has not been given regional and unified attention to determine its position and explain and delineate its boundaries and limits.

### Theoretical Framework

In an article titled "Border Studies: An Anthropological Approach to Archaeological Research in Iran," Alizadeh (2015, 34) defines borders and boundaries as follows. Border: A place where a borderline is drawn or a borderline has passed through it, usually with governments or states playing a decisive role in its creation. A border is a line where the division and grouping of spaces, people, and territories meet. Borderlands: Borders are areas that are close to the border or are considered marginal areas relative to the center (*ibid.*, 34). During his archaeological excavations in Bactria, Afghanistan, and the Margiana Oasis, Turkmenistan, Sarianidi (2002, 86-87). considered the spread of this culture to be within the two regions of Bactria and Margiana. Frankfurt and Karlovsky consider the spread of this culture to be in the basin of the Jeyhun (Amu Darya) River (Lemberg-Karlovsky, 2013, 21; Francfort, 2005, 102). Biscione & Vahdati (2012, 527) also define the boundaries of this culture in Greater Khorasan, based on the results of archaeological excavations and studies in Khorasan. No comprehensive and independent research has been conducted to identify the boundaries of the BMAC culture. Vahdati and Biscione, in a map published in a short article, suggest approximate and approximate boundaries for this culture in northern Khorasan

(*ibid.*, 359). However, in reality, the boundaries of this culture in western and southern Khorasan have not been determined. Basafa & Davari (2021) also studied settlements related to the BMAC culture in an article titled “Introductory Understanding and Settlement Pattern of the Late Bronze Age of the Kashf-e Rud Basin (Mashhad Plain)”. Therefore, this article has been devoted to a detailed exploration of the borders by separating the border areas from the central areas. Biscione and Vahdati use three terms to interpret the status of the BMAC culture findings in the eastern half of Iran: 1) core area, 2) expansion area, and 3) influence area (Biscione & Vahdati, 2012, 528). This division is our theoretical framework for identifying the central regions from the border regions. Based on this, we can consider Margiana and southern Bactria as the central core, eastern Bactria and northern and central Khorasan as the expansion region, and southern Khorasan as the region under influence.

### Research Method

The present research was conducted using a descriptive-analytical method and the data collection was done by library research according to the type of research, purpose, and method. To collect the data, the required information was collected by referring to documents and reading books and articles. The data collection tool of this research includes taking notes from written sources.

### Data Analysis

#### • Borders and boundaries of the BMAC culture in Khorasan

Identifying the extent of influence and determining the extent of the spread of the BMAC culture in Khorasan requires a detailed examination of the information obtained from archaeological surveys and excavations carried out in this region.

Regarding the spread of the BMAC culture and determining the extent of the influence of this culture in the eastern half of Iran, it should be noted that in part of this region, settlements of the BMAC culture can be identified, and in other regions, only works and findings related to this culture have been identified, which is likely to have occurred as a result of one or more factors (trade-economic relations, cultural-economic influence and effects, and migration of human groups on a limited scale and with specific goals). To draw conclusions, the BMAC cultural borders have been drawn in three separate sections, considering today’s political borders.

#### - The borders of the BMAC culture in North Khorasan province

The settlements of the BMAC culture in North Khorasan Province can be introduced by county as follows: Jiran Tepe (Vahdati, 2014a, 459-464), Tepe Jangi (Vahdati, 2015, 267) in Esfarayen County, Tepe Eshgh and Tepe Yavar (Vahdati, 2014b, 19-27) in Bojnourd County, Tepe Chelo (Biscione & Vahdati, 2012, 235-236), Tepe Rafta (Vahdati, 2011, 184) and Tepe Fakhraniyeh in Jajarm, Tepe Devin (Dana, 2015, 178-175) and Tepe Naderi (Vahdati & Zhang, 2018, 527) in Shirvan County, Tepe Yam in Farouj County. Based on the results of archaeological studies and investigations in the western regions of this province in the cities of Jajarm and Bojnourd, in addition to the pottery of the BMAC culture, signs of the influence of the Bronze Age culture of the Gorgan Plain were also observed. In this region, the influence of the Gorgan Plain culture is evident in the cities of Mane, Samalqan, and Garme. It should be noted that most areas of North Khorasan Province (Bojnourd, Esfarayen, Mane, Samalqan, Garme, and Jajarm) were under the influence of the Gorgan Plain and Tepe-Hisar cultures before the formation of the BMAC culture. These areas came under the influence of this culture with the

spread of the BMAC culture (Iravani Ghadim & Tahmasebi Zaveh, 2018; Tahmasebi Zaveh, 2015; Tahmasebi Zaveh & Iravani Ghadim, 2015, 99).

During the BMAC culture period, the eastern and southern regions of North Khorasan province were under the influence of the BMAC culture, and these areas are considered part of its geographical area. Most of the BMAC culture settlements were formed in two main areas of North Khorasan province: 1) Eastern half of the province: In this area, BMAC culture settlements were formed along the natural corridor of Mashhad-Shirvan. This natural corridor includes open and vast plains (Mashhad, Chenaran, Quchan, Farouj, Shirvan) with fertile soils and abundant and permanent rivers (Kashf Rud and Atrak). This corridor, without natural obstacles, connects the Mashhad plain to Farouj and Shirvan through Quchan. In the western part of this corridor, settlements of the BMAC culture have formed in Farouj and Shirvan in the Atrak River basin. 2) South of the province: The second area of formation of BMAC culture is located in the southern half of North Khorasan province and south of the Eastern Alborz Mountains (Aladag). BMAC culture settlements have been formed in this area, which includes the cities of Jajarm and Esfarayen. The location of these two cities south of the Aladag Mountains has caused these areas to be easily connected to Sabzevar and Neyshabur without natural barriers. Therefore, the west of the cities of Bojnourd and Jajarm is known as the last limit of the geographical expansion of the BMAC culture in this area.

The following factors can be mentioned as reasons for the inability of the BMAC culture to penetrate and spread to the western regions of North Khorasan Province and the plains of Gorgan:

The existence of a dynamic and active culture called the Gorgan Plain Culture (characterized by the region's Bronze Age gray pottery) in the west

of North Khorasan Province, which is considered an active human obstacle to the expansionism of the BMAC culture in the western regions.

The presence of dense vegetation in the Golestan Forest and the different climate between the eastern and western regions of North Khorasan Province, especially the Samalqan region, have prevented the BMAC culture from penetrating the western regions of North Khorasan and the plains of Gorgan.

#### - Borders and boundaries of the BMAC culture in Khorasan Razavi province

In this province, Kolab Hill in Bakharz, Sadaban Pottery in Taybad, Ghosh Hill in Juyin, Kabir in Chenaran, Yarim Hill, Khakhian Hill, Yukhar Qala Qara Qoyunlu, Nowruz Hill, Lake Hill, Olia Hill No. 2, Shahr Tepe, Nokhandan Hill, Kohaneh Qala Mir Qala, Yaste Hill, Meri Palkanlu Hill, Yukhar Qala Saadabad, Qaravel Hill, Jashanabad Hill, Nasir Hill in Dargaz County (Baghizadeh, 2012, 156-169), Damghani Hill (Vahdati & Frankfort, 2010, 17-36), Farizi Hill in Sabzevar (Sabori et al., 2015, 91-111), Firuzeh Town (ibid., 91-111), Karim Abad, Astayesh Hill and Neyshabur P in the county Neyshabur, the settlements of the BMAC culture have been identified. At the lower limit of this delineated boundary, BMAC culture cemeteries have been identified in Gonabad (Kakhak area) and Bardskan (Chopan area) counties (Heydari, & Babazadeh, 2016, 5-6). Considering



Fig. 1. Approximate proposed area of the BMAC culture in northeastern and eastern Iran. Source: Authors.

the existence of BMAC culture settlements in the westernmost part of Khorasan Razavi province (Sabzevar and Davarzan cities), it can be stated that BMAC culture has penetrated and spread in the west of this province. On the other hand, considering the lack of identification of BMAC culture settlements in the east of Semnan province, it can be stated that natural obstacles (the presence of plains and dry lands, lack of fertile agricultural lands, and lack of water in the desert plain) are the main reason for the lack of development of BMAC culture in the eastern region of Semnan province. Considering the identification of BMAC culture sites in the southern half of the province, Torbat city can be considered as the cultural and political border of BMAC culture in the southern part of Khorasan Razavi.

#### **- Borders and boundaries of the BMAC culture in South Khorasan Province**

In the south of Khorasan Razavi Province, in the counties of Gonabad (Kakhk area) and Bardasekan (Chopan area) and in the northern half of South Khorasan Province, in the counties of Darmian (Razeh area) (Soroush & Yousefi, 2014, 273-271), Tabas (Bekanda cemetery) (Anani & Iravani Ghadim, 2021, 169), Ferdows (Gavand Baghestan) (Farjami, 2015, 21), Ghaen (Sartakhte Baraz), (Gholinezhad, 2024, 516) tombs of the BMAC culture have been identified. In other words, in the south of Khorasan, or in other words, in eastern Iran, no settlement belonging to the BMAC culture has been identified so far.

Perhaps the reason for this can be found in the unfavorable natural conditions of the above regions, which lacked suitable conditions for the life and settlement of human groups in the Late Middle Ages. Most likely, the presence of the desert plain and the Lut desert (vast deserts, barren and dry lands, lack of water) in this region acted as a natural obstacle to the expansion and development of the BMAC culture. One of the main reasons for

the failure of the BMAC culture to penetrate and expand its geographical range towards southern Khorasan is its distance from the central nuclei of power and lack of sufficient control over distant regions such as southern Khorasan/eastern Iran (Fig. 1).

#### **Discussion**

In North Khorasan Province and in the cities of Esfarayen (Jiran Tepe, Tepe Jangi), Bojnourd (Tepe Eshgh and Tepe Yavar), Jajarm (Tepe Chelo, Tepe Rafta and Tepe Fakhraniye), Shirvan (Tepe Bibi Hanifa, Tepe Turkman, Tepe Devin and Tepe Naderi) and Faroj (Tepe Yam), settlements of the BMAC culture have been identified. Before the emergence of the BMAC culture, the plains of Esfarayen and Jajarm were under the influence of the Bronze Age and Chalcolithic cultures of the Gorgan plain, and after this time, with the spread of the BMAC culture in western Khorasan, they came under the influence of this culture. In other words, the BMAC culture has grown and expanded within the geographical area of the Namazgah culture in Khorasan and has also occupied parts of the geographical area of the Gorgan pottery culture (Iravani Ghadim et al., 2017). Therefore, the pottery of the BMAC culture and the Bronze Age gray pottery of the Gorgan Plain are observed simultaneously in the western regions of this province. Based on the results of studies conducted in the cities of Sarakhs, Mashhad, Rashtkhar, Neyshabur, Chenaran, Ghuchan, Sabzevar, Davarzan, Tayebad, Bakharz and Bardaskan, sites or cemeteries related to the BMAC culture have been identified. Although the number of identified sites related to this culture is limited. A few number of sites indicates the spread of the BMAC culture in northeastern Iran. The eastern and northern regions of this province are adjacent to the main areas where the BMAC culture was formed. Therefore, the existence of

BMAC culture settlements in these areas is not far-fetched. Considering the identification of settlements of this culture in the western regions of the province (Sabzevar, Davarzan), it can be stated that the BMAC culture has influenced the western regions of this province. In the southern region of Khorasan Razavi, settlements of Khushe salar have been identified in Rashtkhar and Tepe Choupan Bardaskan. Therefore, it can be stated that the entire geographical area of Khorasan Razavi province is considered part of the BMAC culture. As mentioned, artifacts related to the BMAC culture and graves with BMAC gravestones have been identified in the northern half of this province in Gavand Baghestan Ferdows, Rازه Darmian, Sartakhte Baraz ghaen, and Bakanda Tabas.

### Conclusion

The findings of archaeological excavations and surveys in the eastern half of Iran during the Bronze Age show that the north and center of Khorasan (the political area of the eastern half of North Khorasan Province and the north and center of Khorasan Razavi Province) were under the control and influence of BMAC culture. In other words, this region is considered part of the geographical extent of the BMAC culture. In response to the question of what areas does the BMAC culture's influence in Khorasan include? It should be stated that based on the research conducted, it is possible to draw the borders of this culture approximately and based on the existing findings. According to the available evidence and information, the cities of Bojnourd and Jajarm are introduced as the borders and boundaries of the BMAC culture in the northwest of Khorasan with the Bronze Age culture of the Gorgan Plain. In this regard, the cities of Davarzan and Sabzevar are proposed as the final limit of the expansion of the BMAC culture in the west of Khorasan Razavi Province. The central desert of Iran, as a natural barrier, has prevented

the expansion of the BMAC culture to the center of the Iranian plateau. The Ghohestan mountain range is also introduced as a natural barrier to the southern borders of this culture. In response to the second question, how can the existence of the BMAC culture in Khorasan be explained? It should be stated that the BMAC culture has taken over vast parts of Khorasan to expand its influence in its western borders, as well as to expand its geographical territory and reach the fertile plains of Khorasan with the two abundant Atrak rivers and discover the fertile foothills of the Hezarmasjid and Binalud mountain ranges. Also, in the province of South Khorasan, due to the lack of suitable environmental conditions, as well as the distance from the central core of the formation and power of this culture, and also because this region is located on the way to large cultural regions in southeastern Iran, including Shahr-e-Sukhte, efforts have been made to establish trade bases and regional communications in this part of Khorasan.

### Conflict of Interest

The authors declare that they have no conflict of interest in conducting this research.

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#### ERRATUM

##### ERRATUM

Explanation of the Boundaries of the Middle Bronze Age in Northeastern and Eastern Iran Based on Archaeological Studies of the Bactria-Margiana Culture

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**Erratum Text:** In the above article, the affiliation of the author Farshid Iravani Ghadim was incorrectly listed as:

"Department of Archaeology, Faculty of Conservation and Restoration, Art University of Isfahan, Iran"

##### The correct affiliation should read:

"Department of Archaeology, Faculty of Conservation and Restoration, Tabriz Islamic Art University, Iran"

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