



THE CONTRIBUTION OF THE SCHOLARS OF MAWARANNAHR TO WORLD CIVILIZATION: KNOWLEDGE PRODUCTION, TRANSMISSION, AND INTELLECTUAL LEGACY

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Abstract. This article examines the contribution of the scholars of Mawarannahr to world civilization through the interconnected processes of knowledge production, intellectual systematization, and transregional transmission. Historically known as Transoxiana, Mawarannahr emerged as one of the major centers of Muslim civilization in the medieval period and became closely associated with such cities as Bukhara and Samarkand. The purpose of the study is to analyze how the scholars of this region influenced world civilization through original scholarship, the organization of inherited knowledge into durable systems, and the circulation of their works across cultural and linguistic boundaries. The study applies historical-comparative, textual-analytical, and intellectual-historical methods. The results show that the scholars of Mawarannahr made a multidimensional contribution to world civilization. First, they generated original scientific and theological knowledge. Second, they transformed diverse bodies of knowledge into systematic and teachable intellectual frameworks. Third, their works entered wider Islamic and, in some cases, European traditions through translation, commentary, institutional teaching, and long-term scholarly reception. The cases of al-Farghani, Ibn Sina, al-Bukhari, al-Maturidi, and Ulugh Beg confirm that Mawarannahr should be regarded not as a peripheral region, but as a major intellectual center of the premodern world. The article also emphasizes that the region's importance lay not only in individual genius, but in the scholarly environment that enabled knowledge to be produced, preserved, and transmitted across civilizations.

Key words: Mawarannahr, Transoxiana, world civilization, Islamic scholarship, intellectual history, knowledge transmission, al-Farghani, Ibn Sina, al-Bukhari, al-Maturidi, Ulugh Beg.

ВКЛАД УЧЕНЫХ МАВЕРАННАХРА В МИРОВУЮ ЦИВИЛИЗАЦИЮ: ПРОИЗВОДСТВО ЗНАНИЙ, ПЕРЕДАЧА И ИНТЕЛЛЕКТУАЛЬНОЕ НАСЛЕДИЕ

Аннотация. В статье анализируется вклад ученых Мавераннахра в мировую цивилизацию через взаимосвязанные процессы производства знаний, их систематизации и трансрегиональной передачи. Исторически известный как



Трансоксиана, Мавераннахр в средневековый период стал одним из крупнейших центров мусульманской цивилизации и был тесно связан с такими городами, как Бухара и Самарканд. Цель исследования заключается в определении того, каким образом ученые данного региона повлияли на мировую цивилизацию посредством создания оригинальных научных трудов, превращения унаследованных знаний в устойчивые интеллектуальные системы и распространения своих произведений через культурные и языковые границы. В исследовании применяются историко-сравнительный, текстологический и интеллектуально-исторический методы. Результаты показывают, что вклад ученых Мавераннахра носил многоплановый характер. Во-первых, они создавали оригинальные научные и богословские знания. Во-вторых, они преобразовывали разнообразные знания в системные и преподавательные интеллектуальные конструкции. В-третьих, их труды вошли в более широкие исламские, а в ряде случаев и европейские традиции через переводы, комментарии, институциональное преподавание и длительное научное восприятие. На примере ал-Фаргани, Ибн Сины, ал-Бухари, ал-Матуриди и Улугбека подтверждается, что Мавераннахр следует рассматривать не как периферийный регион, а как один из важнейших интеллектуальных центров домодерного мира.

Ключевые слова: Мавераннахр, Трансоксиана, мировая цивилизация, исламская ученость, интеллектуальная история, передача знаний, ал-Фаргани, Ибн Сина, ал-Бухари, ал-Матуриди, Улугбек.

MOVAROUNNAHR OLIMLARINING JAHON SIVILIZATSIYASIGA QO‘SHGAN HISSASI: BILIMLAR YARATISH, UZATISH VA INTELLEKTUAL MEROS

Annotatsiya. Mazkur maqolada Movarounnahr olimlarining jahon sivilizatsiyasiga qo‘shgan hissasi bilimlar yaratish, ularni tizimlashtirish va transregional uzatish jarayonlari orqali tahlil qilinadi. Tarixda Transoksiana nomi bilan ham ma’lum bo‘lgan Movarounnahr o‘rta asrlarda musulmon sivilizatsiyasining yirik markazlaridan biriga aylangan bo‘lib, Buxoro va Samarqand kabi shaharlar bilan chambarchas bog‘liq bo‘lgan. Tadqiqotning maqsadi ushbu hudud olimlari jahon sivilizatsiyasiga qanday qilib original ilmiy meros yaratish, avvalgi bilimlarni mustahkam intellektual tizimlarga aylantirish va o‘z asarlarini madaniy hamda til chegaralaridan tashqariga yoyish orqali ta’sir ko‘rsatganini aniqlashdan iborat. Tadqiqotda tarixiy-qiyosiy, matnshunoslik va intellektual tarix yondashuvlari qo‘llanildi. Natijalar shuni ko‘rsatadiki, Movarounnahr olimlarining hissasi ko‘p qirrali bo‘lgan. Birinchidan, ular original ilmiy va kalomiy bilimlar yaratgan. Ikkinchidan, turli bilimlar majmuasini izchil va ta’limga mos intellektual tizimlarga aylantirgan. Uchinchidan, ularning asarlari tarjima, sharh, madrasaviy ta’lim va uzoq muddatli ilmiy qabul jarayonlari orqali kengroq islomiy, ayrim hollarda esa Yevropa ilmiy an’analariga kirib borgan. Al-Farg‘oniy, Ibn Sino, al-Buxoriy, al-Moturidiy va Ulug‘bek misolida Movarounnahrni periferik hudud emas, balki premodern dunyoning yirik intellektual markazlaridan biri sifatida baholash lozimligi asoslanadi.



Kalit so‘zlar: Movarounnahr, Transoksiana, jahon sivilizatsiyasi, islomiy ilmiy meros, intellektual tarix, bilimlar uzatilishi, al-Farg‘oniy, Ibn Sino, al-Buxoriy, al-Moturidiy, Ulug‘bek.

1. Introduction

Mawarannahr occupies a distinguished place in the intellectual history of the medieval world. In classical historical usage, *Mā warā’ al-nahr* meant Transoxiana, literally “what lies beyond the river,” referring to the territories beyond the Amu Darya [1]. Modern scholarship also characterizes Transoxiana as one of the major centers of Muslim civilization, especially through the fame of Bukhara and Samarkand [2]. This interpretation allows Mawarannahr to be understood not only as a geographical region but also as a historical space of knowledge production.

The relevance of this topic is determined by the growing scholarly interest in the role of Central Asia in global intellectual history. The legacy of Mawarannahr cannot be reduced to separate biographies of famous scholars. Its significance lies in the fact that the region generated durable traditions in astronomy, medicine, hadith studies, and theology that later entered broader Islamic and, in some cases, European intellectual contexts [3; 4].

The purpose of this article is to analyze the contribution of the scholars of Mawarannahr to world civilization through the mechanisms of knowledge production, systematization, and transmission. The research question is formulated as follows: How did the scholars of Mawarannahr influence world civilization through their scientific, medical, theological, and intellectual legacy?

The scientific novelty of the study lies in an integrated interpretation of Mawarannahr not only as a historical region, but also as an intellectual environment that produced, organized, and transmitted knowledge across civilizations.

2. Literature Review and Research Gap

The available literature on Mawarannahr can be divided into three main groups. The first group includes regional and historical studies that define Transoxiana as a major center of urban and scholarly life in the medieval Islamic world [1; 2; 4]. The second group consists of works devoted to individual scholars, such as al-Farghani, Ibn Sina, al-Bukhari, al-Maturidi, and Ulugh Beg [5–12]. The third group concerns the circulation of knowledge through translation, commentary, teaching, and institutional reception [3; 5; 7; 9].

At the same time, much of the literature remains fragmented. Many studies examine individual scholars separately, while regional studies often emphasize political or urban history more than intellectual processes [3; 4]. This creates a research gap. There is still a need for an integrated analysis that treats Mawarannahr as a unified intellectual environment in which scientific, medical, and theological knowledge was both created and transmitted. The present article seeks to address this gap by combining regional and person-centered perspectives within a single analytical framework.

3. Materials and Methods

This study is based on a qualitative historical and analytical approach. The source base includes encyclopedic reference materials, academic articles, a monographic study, and heritage-oriented documentary sources devoted to Mawarannahr and its representative scholars [1–13].

Three methods were used. First, the historical-comparative method was applied to compare scholars working in different fields and to identify recurring patterns in their



contribution to world civilization. Second, the textual-analytical method was used to examine how their works were described, translated, and received in later traditions. Third, the intellectual-historical method made it possible to move beyond biographical description and to focus instead on broader mechanisms of knowledge creation and dissemination.

The selection of figures in this article is based on three criteria: representativeness within major disciplines, documented transregional influence, and the availability of scholarly evidence concerning long-term reception. For this reason, the discussion focuses on al-Farghani, Ibn Sina, al-Bukhari, al-Maturidi, and Ulugh Beg.

4. Results

4.1. Mawarannahr as an Intellectual Center

The role of Mawarannahr in world civilization was shaped not only by individual genius, but also by a strong scholarly environment centered in Bukhara, Samarkand, and neighboring urban centers. Historical and regional studies show that these cities were linked with political power, manuscript culture, trade routes, and learned communities, which created favorable conditions for the development of scholarship [2; 4].

The intellectual environment of Mawarannahr encouraged synthesis rather than mere preservation. Scholars associated with the region worked with Greek, Persian, Indian, and Islamic materials, but their lasting significance lay in reorganizing, refining, and teaching this knowledge in systematic forms [3]. Thus, the region contributed to world civilization not only through outstanding personalities, but through a durable culture of learning.

4.2. Original Knowledge and Scientific Refinement: al-Farghani and Ulugh Beg

One of the main forms of Mawarannahr's contribution to world civilization was the production of original scientific knowledge and the refinement of earlier scientific traditions. Ahmad al-Farghani is a clear example of this process. His astronomical work became widely known and circulated beyond its original linguistic context; the preservation of Arabic and Latin traditions of his text demonstrates its broader intellectual importance [5].

Among the outstanding figures associated with the intellectual heritage of Mawarannahr, Mirzo Ulugbek (1394–1449), most commonly referred to in English as Ulugh Beg, occupies a special place. Although he is widely known as a Timurid ruler, his historical significance extends far beyond politics. Under his patronage, Samarkand developed into a major center of Muslim culture and intellectual life, while his observatory and astronomical work secured his place among the most distinguished scholars of the premodern era [6]. In this sense, Ulugh Beg illustrates how Mawarannahr contributed to world civilization not only through individual scholarship, but also through the creation of institutional and intellectual environments in which science could flourish.

Ulugh Beg's scientific role was especially important because he combined patronage of learning with direct research activity. Scholarly work on his star catalogue shows that it was based on original observations and stands out in the history of astronomy between Ptolemy and Tycho Brahe [7]. Therefore, al-Farghani and Ulugh Beg together demonstrate that the scientific legacy of Mawarannahr included preservation, correction, measurement, and organized inquiry.

4.3. Systematization of Knowledge: Ibn Sina and al-Bukhari

A second major contribution of the scholars of Mawarannahr was the systematization of knowledge into durable and teachable intellectual frameworks. This is especially clear in the case of Ibn Sina (Avicenna). His *Canon of Medicine* served as a major medical textbook in



Europe until the mid-seventeenth century [8]. Specialized medical-historical research confirms that Avicenna's influence extended from the Islamic world into the West and that the *Canon* remained central to medical education for centuries [9].

Ibn Sina's contribution was significant not only because of originality, but because of structure. He transformed diverse medical traditions into a coherent and teachable system. In this sense, Mawarannahr contributed to world civilization through epistemic organization: it produced works that shaped how later generations learned and transmitted knowledge.

A similar pattern is visible in the case of al-Bukhari. As a scholar from Bukhara, he achieved exceptional authority in hadith studies, and his chief work came to be regarded in Sunni Islam as second only to the Qur'an in authority [10]. His contribution lay not merely in collecting reports, but in establishing enduring standards of selection, arrangement, and authentication. If Ibn Sina systematized medical knowledge, al-Bukhari systematized religious transmission. Together, they show that Mawarannahr shaped both scientific and normative forms of scholarship.

4.4. Rational Theology and Doctrinal Synthesis: al-Maturidi

The contribution of Mawarannahr was also decisive in theology. Abu Mansur al-Maturidi of Samarkand became the eponymous figure of a theological school that arose in Transoxania and later became one of the important foundations of Sunni doctrine [11; 12]. His thought is significant because it linked doctrinal loyalty with rational argumentation and thus helped construct a durable theological synthesis.

In civilizational terms, al-Maturidi's contribution lies in the institutionalization of theological reasoning. Scholarship on the development of Sunni theology in Samarqand shows that his work emerged from a regional intellectual milieu and later achieved broader influence [11]. This means that the legacy of Mawarannahr included not only scientific refinement and medical systematization, but also the formation of a rational theological tradition with long-term transregional significance.

4.5. Translation and Scholarly Circulation

The contribution of Mawarannahr scholars became global because their works moved beyond local scholarly circles. Translation, commentary, teaching, and institutional reception enabled this process. Al-Farghani's astronomical writings circulated in Arabic and Latin traditions [5]. Ibn Sina's *Canon* became a standard text in medical education far beyond Central Asia [8; 9]. Ulugh Beg's astronomical legacy entered the broader history of observational science [6; 7]. Al-Bukhari's collection became canonized in Sunni religious life [10], and al-Maturidi's theology spread through the development of the Maturidiyyah school [11; 12].

This pattern shows that Mawarannahr functioned not only as a place of knowledge production, but also as a bridge of intellectual circulation. The region's scholars created works capable of crossing linguistic, institutional, and civilizational boundaries. For that reason, the significance of Mawarannahr in world civilization was both regional in origin and universal in effect.

5. Discussion

The analysis makes it possible to identify three main mechanisms through which the scholars of Mawarannahr contributed to world civilization.



First, they produced original knowledge and refined inherited traditions, especially in astronomy. Al-Farghani and Ulugh Beg show that scientific work associated with Mawarannahr could generate lasting contributions to the history of astronomy [5–7].

Second, they systematized knowledge into durable and teachable forms. Ibn Sina and al-Bukhari reveal that the region’s scholars were not only innovators, but also architects of intellectual order [8–10]. This was crucial for long-term authority and transmission.

Third, they transmitted knowledge across civilizations. The spread of texts through translation, commentary, institutional teaching, and confessional adoption ensured that the works of Mawarannahr scholars became part of broader Islamic and, in some cases, European traditions [5; 8–12].

At the same time, the study has certain limitations. It focuses on selected emblematic figures and does not attempt to cover all disciplines, manuscript traditions, educational institutions, or translation networks associated with Mawarannahr. Nor does it fully reconstruct the social history of scholarly communities in Bukhara and Samarkand. These aspects require separate investigation.

Nevertheless, the findings support the conclusion that Mawarannahr should be regarded not as a peripheral frontier, but as one of the intellectual heartlands of the premodern world. Its scholars shaped not only individual branches of learning, but also the broader structures through which knowledge was created, authenticated, taught, and preserved.

6. Conclusion

The scholars of Mawarannahr made a substantial contribution to world civilization through the production, systematization, and transmission of knowledge. Their importance lies not only in personal achievement, but also in the fact that their works became part of broader scientific, medical, religious, and intellectual traditions.

The examples of al-Farghani, Ibn Sina, al-Bukhari, al-Maturidi, and Ulugh Beg demonstrate that Mawarannahr was one of the decisive centers of premodern intellectual history. The region’s legacy was expressed not only in discoveries and texts, but also in the creation of scholarly environments and intellectual frameworks that enabled knowledge to endure across centuries.

Thus, Mawarannahr should be understood as a historical center where scientific, medical, and theological knowledge was not only created, but transformed into enduring civilizational capital.

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