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## Humoral Pathology Theory in the Kutadgu Bilig (Wisdom of Royal Glory): A Karakhanid Turkic Work From the 11<sup>th</sup> Century

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### ABSTRACT

The Turkic people in Central Asia started to convert to Islam in the mid-8<sup>th</sup> century. Islam, just like other religions in other cultures, had an impact on various aspects of Turkish life, including literacy, language, and culture. It seems that the concept of four humors has been adopted by Turkic people along with the conversion to Islam. The humoral pathology theory based on the idea that human bodies contain basic four humors, or fluids (i.e., blood, yellow bile, black bile, and phlegm), was the mainstream medical system for hundreds of years. After a paradigm shift in medicine in the mid-19<sup>th</sup> century, this theory was replaced with the modern germ theory. However, the reflections of the four humors theory can be observed in the *Kutadgu Bilig*, an 11<sup>th</sup> century Central Asian Turkic “mirror for princes,” which contains pieces of advice on ideals of statecraft. It is also possible to find the traces of medical understanding of Turkic people from that period in this work. The evaluation of the manuscript shows that it contains valuable information related to humoral pathology theory. Some of the examples are that it emphasizes that the harmony of the humors is essential for a healthy life; the relationship between temperament and age, season, food, and four qualities (hot–cold and wet–dry) is expressed. In conclusion, the *Kutadgu Bilig* is a good sample of work containing information on the humoral pathology theory in Central Asian Turkish medicine from the 11<sup>th</sup> century.

**Keywords:** History of medicine, humoralism, medical philosophy, *Kutadgu Bilig*

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### INTRODUCTION

The *Kutadgu Bilig* (Wisdom of Royal Glory), written in Central Asia by Yusuf Has Hacib in the 11<sup>th</sup> century, is an ethical-didactic poem from the Karakhanid period (840–1212) and is the oldest work of Islamic Turkish literature. Its author Yusuf was given the title of Privy Chamberlain (Has Hacib) as a reward. Texts offering advice to rulers and high-rankers on how to govern are generally referred to as a “mirror for princes” in the literature (1). Examples of this literary genre on statecraft and political knowledge are seen in various cultures around the world, which include *Siyaset-nameh* (Book of Government) by Nizam al-Mulk, *Nasihah al-muluk* (Book of Counsel for Kings) by Al-Ghazali, and *Qabus-nameh* by Kaikavus (2). Turkologist Dankoff, who prepared an English translation of the work, described the *Kutadgu Bilig* as a “Turco-Islamic mirror for princes” (Fig. 1) (2).

There are four basic characters in the work: *Küntogdı* (King Rising Sun), the ruler, who represents order and justice; *Aytoldı* (Full Moon), a vizier, who represents holiness, state, good fortune; *Ögdülmiş* (Highly Prased), the son of the vizier, who represents intellectuality and wisdom; and *Odgurmuş* (Wide Awake), close to *Ögdülmiş*, who represents the fate and mystical values (3).

The text was originally written in Turkic script (Fig. 2) (4). Reşit Rahmeti Arat, an old Turkish philologist, examined the existing three copies of the *Kutadgu Bilig*, created an extant text, and translated it into modern Turkish in 1959 (5).

### Content of the *Kutadgu Bilig*

Although it is a “mirror for princes,” the *Kutadgu Bilig* gives advice from every aspect of social life, professions, human relations, and moral values (6). In this context, it is a good sample of work about the values of education, while it contains couplets about telling the truth and righteousness and honesty (7). The *Kutadgu Bilig* is also a unique study stressing the modern principles of medical ethics. A study shows that all four principles of bioethics (i.e., respect for autonomy, beneficence, non-maleficence, and justice) are included in the work (8). In addition, couplets reflecting the medical understanding of the period including health, diseases, aging, and nutrition are also mentioned in the work. For example, the *Kutadgu Bilig* makes recommendations for a healthy life and make a clear distinction between physicians and shamans (5).

The year 2019 marks the 950<sup>th</sup> anniversary of Yusuf Has Hacib’s *Kutadgu Bilig*. Therefore, this event has been included among the 2019 UNESCO Memorial and Celebration Anniversaries.

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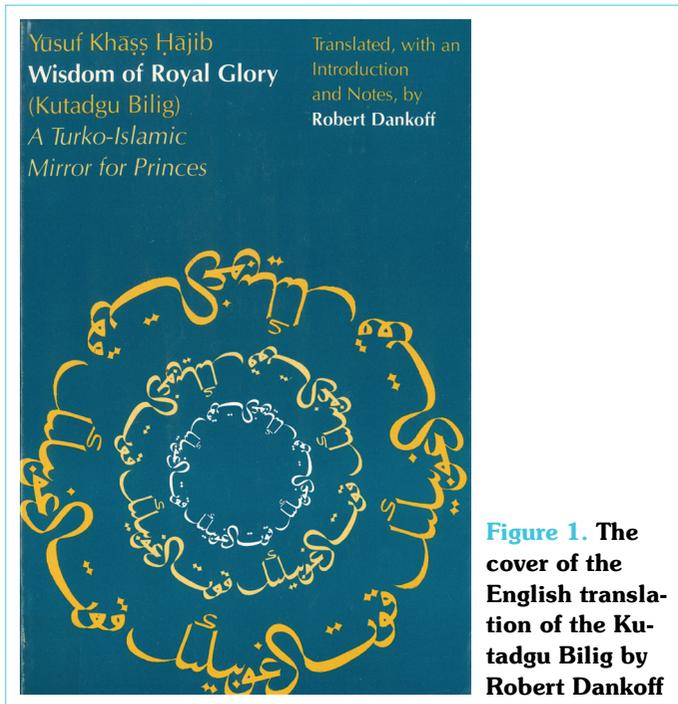
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**Figure 1. The cover of the English translation of the *Kutadgu Bilig* by Robert Dankoff**

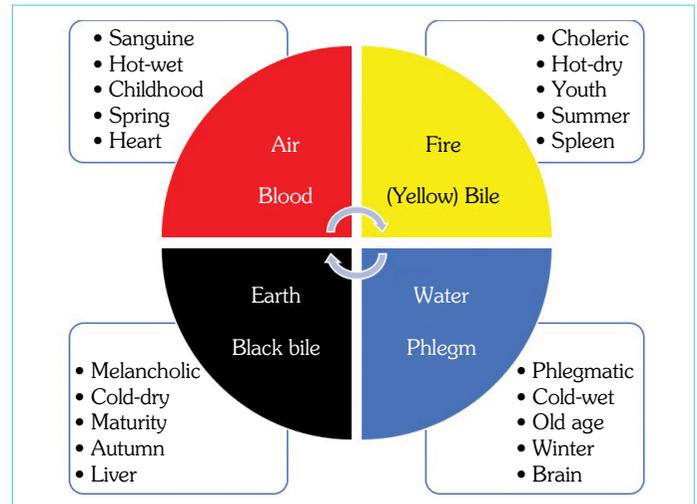


**Figure 2. A Turkish special stamp to commemorate the 900<sup>th</sup> anniversary of the *Kutadgu Bilig* compilation**

### Theory of Humoral Pathology

According to the theory of humoral pathology, health and disease states are closely linked to the balance among humors in the body. It is accepted that the four humors in the body are blood, (yellow) bile, black bile, and phlegm, and these are the corresponding agents of air (wind), water, fire, and earth, which are the four basic substances that make up the universe (9). Each element and every humor has a quality. Accordingly, air is hot-wet, water is cold-wet, fire is hot-dry, and earth is cold-dry. Each element and humor has a corresponding season, planet, horoscope sign, age period, color, organ, temperament, etc. (Fig. 3) (9).

The humoral pathology theory was a dominant concept in medicine, mainly in Europe and nearly the entire world, until the 19<sup>th</sup> century, and it has its roots in Ancient Greece. This theory, developed by Hippocrates in the 5<sup>th</sup> and 6<sup>th</sup> centuries BC and later refined by Galen in the 1<sup>st</sup> century AD, emphasizes the importance



**Figure 3. Illustration of the humoral pathology theory**

of bodily fluids (humors) in the diagnosis, treatment, and prevention of diseases (10).

With the spread of Islam, the translation of the works of Hippocrates and Galen into Arabic began in the 9<sup>th</sup> century, and this theory became the foundation of the Islamic-Arab medicine. In this context, a medical understanding based on humoral pathology was applied in all countries where Islam was spread to (9).

The conversion of Turks to Islam, who belonged to different religions, such as Manichaeism, Buddhism, and Christianity during these times in Central Asia, started in 751 (11). Therefore, this theory, which is based on the four elements, manifests itself in the works of Turkish medicine from the Islamic period. The reflections of this theory are prominent both in the medical works written in the Chagatai Turkish and Uzbek Turkish in Central Asia and in the medical works of the Ottoman Empire (12–14).

The traces of this understanding can be seen in numerous works written by Turks who accept Islam. Information related to the humoral pathology theory can be found not only in medical, but also in non-medical works of Muslim Turks. Probably the first example of this in non-medical works is the *Kutadgu Bilig*.

In this work, four caliphs and four elements have been similarized. In addition, the 12 signs of the zodiac are divided into four groups, which are likened to four seasons and four elements. In some places, it is directly explained that the disturbance of the balance between humors causes diseases. In addition, the relationship between the four humors and nutrition and dream interpretation has also been established.

### Tadu, Unsur (pl. Anasır), and Hilt (pl. Ahlat)

In the medical works from the Ottoman–Turkish period, *Anasır-ı Erbaa* was used to express the four elements, and *Ahlat-ı Erbaa* was used to express the four humors. *Anasır*, which was the plural form of *unsur* (element), and *Ahlat*, which was the plural form of *hilt*, are Arabic words and both were widely used in the Ottoman–Turkish medical terminology (15, 16).

*Tadu/tatu* in old Turkish texts is a word of Sanskrit origin (*dhatu*), which has a meaning of “one of constitutional components of the

body.” The word is defined as “an element in nature; an elementary constituent of the body” in Clauson’s dictionary. Clauson adds that it was mentioned in Uyghur and in Chagatai (Hakani) texts as *tadu* to express “nature” (17).

The word *tadu* in the original text of the *Kutadgu Bilig* was used to express the elements in some couplets and humor in the other ones. Arat, the translator and the editor of the original text chose to use *tabiat* (nature) in consideration of *tadu* in some instances.

## AIM of STUDY and METHOD

In this study, our aim was to reveal the content of the humoral pathology theory in the *Kutadgu Bilig*. For this purpose, we evaluate throughout the text that was edited and translated by Arat the information related to the humoral pathology theory. Related data were presented by chapters.

## RESULTS

### Four Elements (Anasır-ı Erbaa) and Four Humors (Ahlat-ı Erbaa) in the *Kutadgu Bilig*

One can see that Yusuf Has Hacib, the author of the *Kutadgu Bilig*, has a good command of the humoral pathology theory since its reflections are manifested throughout the text, and most of these chapters have non-medical content. These can be listed as presented below (English translation of couplets are from Dankoff’s work).

Chapter III (lines 49–62) called “**Dört Sahabenin Medhini Söyler**” (“**In Praise of Four Companions**”) tells about the virtues of the first four caliphs of the Islamic Empire, that is, Abu Bakr, Umar ibn al-Khattab, Uthman ibn Affan, and Ali ibn Abi Talib. Yusuf Has Hacib has compared the first four caliphs to the four elements, which are air, fire, earth, and water. According to the text these are Prophet Mohammad’s “four friends he liked” and “his advisors”:

*His four companions in whose company he rejoiced—these were his constant advisors.*

Then the names and the personal characteristics of each caliph are listed, and it is stated that the four caliphs are the basis of “religion and sharia.” Thus, Abu Bakr believed in God, his heart and language were honest; Umar ibn al-Khattab is prominent, distinguished, and his language and heart were one; Uthman ibn Affan is well behaved, soft-tempered, generous, and open-handed, while Ali ibn Abi Talib is brave, valiant, a hero, and intelligent.

At the end of the chapter, an analogy is made between the first four caliphs and four elements:

*The four companions seem to me like the four natural elements: when these are in harmony, then life is sound.*

In Chapter V (lines 124–147) titled “**Yedi Yıldızı ve On İki Burcu Söyler**” (“**On the Seven Stars/Planets and the Twelve Constellations**”), the relationship between stars/planets, zodiac signs, seasons, and elements is established. According to the text, the names of the seven stars/planets are *Sekentir* (Saturn), *Onay* (Jupiter), *Kürüd* (Mars), *Yaşık* (Sun), *Sevit* (Venus), *Arzu* (Mercury),

and *Yalçık* (Moon). The names of the twelve zodiac signs are *Kozi* (Aries), *Ud* (Taurus), *Erentir* (Gemini), *Kuçık* (Cancer), *Arslan* (Leo), *Buğdaybaşı* (Virgo), *Çadan* (Scorpio), *Ya* (Sagittarius), *Ülgü* (Libra), *Oğlak* (Capricorn), *Könek* (Aquarius), and *Balık* (Pisces). Three of these 12 signs are spring, three are summer, three are autumn, and three are winter stars, which correspond to fire, water, wind (air), and earth. Of these four elements, which are accepted to constitute the universe, the world, and the countries are formed.

*Know that three are spring stars and three summer, three autumn, and three winter.*

*Three are fire and three water, three wind, and three earth.*

While these elements were “enemies to each other,” God sent “enemies against the enemy,” so that “incompatible enemies” made peace among themselves and “destroyed their revenge.” It emphasizes the unitedness and regulatory characteristics of Islam in this section:

*God who brings order from chaos himself arranged it thus, bringing peace and order among them.*

In Chapter XX (lines 1045–1157) titled “**Saadetin Devamsızlığını ve İkbalin Döneklğini Söyler**” (“**On the Inconstancy of Fortune**”), it is explained that the disruption of the balance between four humors causes diseases. Thus, humors are in harmony at first, and this is a healthy state. But then the state of the equilibrium is disrupted, causing physical illness:

*The natural humors that were in harmony now quarreled within him: one of them became dominant and oppressed the other three.*

*His natural constitution became altered, his nourishment seemed raw, his heart was heavy, his humor corrupt, and his strength diminished.*

*His body that was straight as a young pillow shoot now became bent over.*

The text is followed by the arrival of physicians who examined Aytoldı for his severe illness, diagnosed it and gave treatment recommendations, but there was no information about the four humors.

In Chapter XLII (lines 3512–3645) called “**Odgurmuş Ögdülmiş’e Dünyanın Kusurlarını Söyler**” (“**Wide Awake Recounts the World’s Faults to Highly Praised**”), it is stated that the things that make the world livable have three equal components. These are food and drink, women, and healthy living. Then the information about these three titles respectively is given. The subject of the article is related to eating and drinking. According to it, care must be taken to digest the food. If the food is not digested, this can lead to illness and death leading to disbalance between the humors:

*Then, if the food is not digested properly, the humor becomes corrupt, and you fall ill.*

*Illness, for a man, is Death’s vanguard. And there is no pleasure in death, O heedful one!*

The world and the God are mentioned in Chapter LXIV (lines 3713–3895), titled “**Odgurmuş’ın Hükümdara Mektup Yazıp**

**Gönderdiğini Söyler” (“On the Writing and Sending of a Letter by Wide Awake to the King”):**

*He made the sun to shed light upon this dark domed house of clay.*

*He brought into being the blue sky, raising it aloft, and adorning it with sun and moon and stars.*

*Below, brown earth and blue water; above, pure air and fire.*

*Hot and cold, dry and moist: these did He bring into harmony and apportion to His creatures.*

In these couplets, it is clearly stated that the universe was created from four elements: wind (air), water, fire, and earth. Earth and water are the elements below, while wind (air) and fire are the elements above. This is followed by a statement emphasizing the importance of four qualities (i.e., cold-hot and dry-moist) first mentioned by Empedocles in (10).

Chapter LXV (lines 4573–4643) titled “**Ögdülmiş Odgurmuş’a Ziyafete Gitmek Adabını Söyler**” (“**Highly Praise Tells on the Banquet Etiquette to Wide Awake**”) contains information on both the banquet manners and the food–health relationship: Humankind should make a differentiation between hot and cold qualities. One should know about the nature of any food before eating it and should stay away from foods considered inappropriate for his or her temperament.

*Adam’s son, if he claims to be human, should be able to distinguish hot and cold.*

*He must understand the body’s natural constitution, eat what agrees with it and refrain from what does not.*

The emphasis is placed on the importance of temperament in a person’s diet. People also can be divided into four categories according to personality properties. Blood-dominated people are considered sanguine, phlegm-dominated people are considered phlegmatic, (yellow) bile-dominated people are considered chloric, while black-bile-dominated people have a melancholic temperament. These features have priority in the diets of individuals since each food is classified according to these four properties (i.e., cold, hot, dry, wet). For example, if a person has a cold temperament, he or she should have hot foods and drinks in their diet. This is also true for the other temperaments.

Further information is provided in the text: One should use cold things when one is young (i.e. spring) since young blood will warm these. One should stabilize temperament with hot things when older than 40 years (i.e., autumn). One should use hot things and avoid cold things when older than 60 years (i.e., winter). If you regulate your temperament in this manner, you will live peacefully and healthy.

*If the hot element is dominant, drink something cold; if the cold is dominant, balance it with something hot.*

*If you are young, and it is springtime, take things that are cold by nature, they will cool your blood.*

*If you are past forty, and it is autumn, regulate your humor with something hot.*

*And if you are sixty, and the season is winter, take hot things only, nothing cold.*

*When the dry and the cold are ascendant, prepare the hot and the wet, for these two will offset those.*

*While if wet and cold predominate and do you harm, oppose them with hot and dry.*

*If your humor is cold, then overcome it with hot; if hot, then continually eat and drink cold.*

*But if your humor is evenly balanced, take equal shares of hot and cold.*

*Thus you will keep your natural constitution in just proportion, and your life will pass in health and tranquillity.*

Later, colors representing each temperament are mentioned in the text. Each temperament corresponds to a different color in the humoral pathology theory. Thus, the color of sanguine people is red, the color of phlegmatic people is white, the color of chloric people is yellow, and the color of melancholic people is black.

The *Kutadgu Bilig* says that each person is represented by one of the four colors: red, yellow, white, or black. If one would like to live in a stable manner, he or she should be smart and have a proper diet corresponding to his or her temperament. This is the difference between a human being and an animal.

*Hearken to the words of the physician, my lamb:*

*The bodily humors I recount; red blood, white phlegm, yellow bile, and black.*

*They are enemies each to each: when one advances drive it back.*

*In order to keep one’s natural humors in balance one must eat only what agrees, and this requires the exercise of intellect.*

*This, my son, is what distinguishes man from beast.*

*So heed these words of the wise greybeard, and do not remain a savage:*

*If a man reaches forty and does not know his own natural humor, then he is wholly a beast, albeit he may speak.*

The relationship between seasons and four humors is mentioned in Chapter LXXVII (lines 5993–6031) titled “**Ögdülmiş Odgurmuş’a Rüya Tabirini Söyler**” (“**Highly Praised Tells Wide Awake How to Interpret Dreams**”).

*Many dreams come according to what one eats and drinks. If you eat something that disagrees with you, you will have a disagreeable dream.*

*Others come according to the season of the year, and which of the humors is predominant.*

*If it is spring, and a very young man sees in his dream*

*all red things and the brown earth,*

*It is a sure sign that the sanguinary humor is predominant, and he needs to be bled.*

*If it is summer, and a young man dreams of yellow and orange, or of saffron and ground corn,*

*Then the yellow bile is predominant and he should be given Persian manna as a purgative.*

*If a mature man, in autumn, sees a black mountain, or a well, or any hole,*

*Then the black bile is predominant and he should be administered a potion that will clear his brain.*

*And if an old man, in winter, dreams of running water or of ice and snow and hail,*

*Then his phlegm is predominant and he should be given hot food and drink as remedy.*

Each humor has a corresponding season in this context, which means that seasons are dominated by a specific humor. Spring is the season of blood, summer is the season of (yellow) bile, and autumn is the season of black bile, while phlegm is the dominant humor of winter. Appropriate treatment options are chosen using the humoral pathology theory.

## CONCLUSION

This study shows that the elements of humoral pathology theory are mentioned in the *Kutadgu Bilig*, the first Turko-Islamic work of Central Asian Turkish literature from the 11<sup>th</sup> century. The work emphasizes the significance of harmony of the humors for a healthy life; as well as the relationship between the temperament and age, season, food, and four qualities (hot–cold and wet–dry). The 12 signs of the zodiac are grouped into four elements, that is, air (wind), fire, earth, and water. The chapter dealing with the interpretation of dreams is especially a good example on changes in the human nature with regard to age and season.

All these examples show that Yusuf Has Hacib, the author of the *Kutadgu Bilig*, had a deep knowledge on medicine and on the humoral pathology theory since the text contains valuable information on the work. Yusuf possibly was an intellectual and got this knowledge from medical and/or Islamic texts since the work also covers Islamic religious elements.

The *Kutadgu Bilig* may be the first Turkish written text covering the issues of humoral pathology theory (i.e., four elements and four humors). Since Greek medicine was reshaped in the Islamic culture, this new Greco-Islamic medicine found an opportunity to spread in all Islamic societies, and the Central Asian Turkic people are among them. In this manner, a great number of works have been written that reflected the spirit of the humoralism, while the *Kutadgu Bilig* is a distinguished sample of them.

In this respect, we think that non-medical manuscripts should be seen as a valuable source in the field of history of medicine.

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