

## CHAPTER 3

### An account of fieldwork researching zeybek tunes and dances in Turkey

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[For reasons of storage availability this paper is temporarily published without photos.]

As is known, the term “zeybek” is an interesting cultural-ethnic identity, one on which academics have offered various opinions regarding the origins and etymology of the word, referring to a group of people who have maintained their own existence and their own culture. We know that zeybeks found a viable environment for living throughout Western Anatolia in the period when the Ottoman Empire was beginning to falter in administrative, political, economic and social terms (as from the 16th century and especially through the 18th and 19th centuries). Their existence was made possible by the lack of government authority and similar reasons. Although the “zeybeks” – who can be called a kind of “social bandit” organization – primarily targeted the authority of the Ottoman State, in the process they also evolved as groups that opposed all kinds of authority.

*Zeybek* identity had a considerable effect on the society of Western Anatolia, especially from the 19th century onwards, and it was important in founding the present music, dance and costume traditions of the Aegean. Having completed its mission after the foundation of the Republic of Turkey, the *zeybek* identity disappeared, but *zeybek* songs and dances, the products of a culture that survived for hundreds of years, are very much still in existence and are still performed at almost every opportunity. Many of the dances are individual and solo in nature; and are largely improvised. There are exceptions, but the majority are **slow** and **asymmetrical** in rhythmic structure.

The two most dominant phenomena in which zeybek music and dances are socially matched are heroism and rebellion. The element of rebellion in the history of the concept of Zeybek has created “legendary” Zeybek personalities through traditional music and dance products. Zeybek folk songs refer to the lives of these legendary personalities, and the dances reflect their personal characteristics.

During the War of Independence (1919–22), the zeybek groups, which gave intense support to the National Forces, experienced a very interesting conceptual change and became the heroes of the newly established National State, after having previously been bandit groups that stood against the Ottoman authorities. However, this conceptual change did not lead to a differentiation in the symbols of the zeybek culture, and although the institution of “zeybek” disappeared in material terms, the symbols of “rebellion” and “heroism” continued to be conveyed within the zeybek phenomenon.

As in other traditional Turkish folk music tunes, makam-based aspects must be taken into account in the zeybek melodies. Within zeybek melodies found in *Western Anatolia* it can be seen that a pitch range of more than an octave is used, and *Rast (G)*, *Dügah (A)* and *Segah (B)* pitches are frequently used as tonics related to their makam structure. The melodies are usually constructed using adjacent notes.

Rhythmical patterns of 3+2+2+2, 2+2+2+3 and 2+2+3+2 beats, adding up to a total of 9 beats, are the norm in zeybek dances. In slow (*ağır*) zeybek dances the group of 3 beats is usually found at the beginning of the cycle. In faster dances the 3 group is more often at the end of the cycle. In the slow zeybeks a vocal accompaniment is rare, and *rubato*, which is a stretching of the rhythmic pulses, is often used, particularly if there is a dancer performing.

In contrast to the slower men's zeybek dances, a quicker, softer style is used for women's zeybek dances, also in a 3+2+2+2 format called the *oynak usul*. When lyrics are used for these dances they tend to take the form of compliments and praise to the beloved, coupled with regret caused by his absence. The melancholic nature of the lyrics of these songs would appear to be in conflict with the perceptible jauntiness of the melodies and rhythms used. Nevertheless, folk music fulfils a primarily recreational function, so sad lyrics coupled with jolly rhythms can be seen as just a part of the complexity of the tradition, and the apparent contradiction is tied in with general expectations of form.

**Fig. 1:** Zeybek dance by Taylan Türkoğlu

[Photo: Ali Fuat Aydın, Alangüllü, Germencik, Aydın, 13.01.2008]

In Turkey a rhythmical pattern is known as an *usul*. Once the specific pattern has come to its end it will be repeated over and again in its entirety until the end of the piece has been reached. The only deviation is the possible use of rubato within the cycle as noted above. Sometimes, in the slow dances, the rubato element is itself controlled and used as a fixed part of the way an *usul* is deployed. Thus, in a dance performance, rubato can be applied on top of a rhythm which is already based on a rubato type of structure.

Muzaffer Sarısözen, who was the founder of Turkish folk music theory, always shows *ağır zeybeks* in 9 beats in a 3+2+2+2 format. *Ağır zeybeks* are classified using names such as *aydın* or *ağır aksak*. However, in local practice *ağır zeybek* rhythms may not conform to these *usuls*. So, for example, one new *usul* has been defined and proposed, which is called *ağır zeybek* (Fig.1).

The figure shows a musical staff in 9/2 time. The melody is written in a single line with a treble clef. The rhythm is indicated by a sequence of notes and rests. Below the staff, the rhythmic pattern is written as: d. k t t d. k t t T t t d. k t t T t t d. k t t D d t d. k t t T t t. The letters d, k, t, T, and D represent different rhythmic values. The pattern is divided into four sections labeled I, II, III, and IV. Section I consists of the first three measures (3 beats), section II of the next two (2 beats), section III of the next two (2 beats), and section IV of the final two (2 beats). Above the staff, there are labels A and B, and a sequence of letters a, b, a, b1, a, b, which likely represent different rhythmic motifs or accents.

**Fig.1 – Rhythmic patterns for the ağır zeybek usul**

[Source: Okan Murat Öztürk, “Ağır Zeybek Usul: As a definitive structural element of Zeybek music and its analysis”, Zeibekiko and Zeybek Dance Conference, Institute of Rebetology, London / School of Oriental and African Studies [SOAS] / 29.06-01.07.2007]

*Ağır zeybek* can be defined as an *usul* which is a combination of  $aab + ab + ab1 + ab$  where *a* is a syncopated pattern based on an *usul* known as a *düyek*, and *b* is based on another rhythmical *usul* called *sofyan*. However, in practice, when actual time measurements are made, it will be seen that the *usul* is usually performed as  $aab + w1 + ab + ab1 + ab + w2$  where *w1* and *w2* are points of pause or rubato, which can change in a fixed or random way (when a dancer affects the rhythm) or both, giving the dance various elements of flexibility.

Zeybek dances performed in the open air are generally accompanied by musicians playing the *zurna* and *davul*. Since the start of the 20th century alternative instruments such as the clarinet and even the trumpet have begun to replace the *zurna* in certain regions. In smaller, enclosed settings (or with the use of amplification) the *bağlama* (lute), *kaval* (flute), *kabak kemane* (spiked fiddle) may be used and there are also *ince çalgı* ensembles which consist of oud (*'ud*), the Western violin (*keman*) and hand drum (*darbuka*).

In the area around the city of *Aydın* including *Germencik*; *Acarlar*, *İncirliova*; *Şenköy*, *Koçarlı*; *Kocagür*, *Umurlu* and around the city of *Muğla*, which is to the south of *Aydın*, including *Dibekdere*, *Milas*, many *kaba zurna* music groups earn their living solely by playing music. They play especially for wedding ceremonies (but only at the bridegroom's house) and at other activities such as folk dances, camel wrestling events and other celebrations and festivals.

**Fig. 2:** Map of Aydın and Muğla and surrounding area

Although it is said that the name of *zurna* comes from the Persian words **sur** and **nay**, there are also suggestions that the word has Arabic and Turkish origins. The *kaba zurna*, which has a range of about two octave, is 55 cm in length and it is the longest instrument of the *zurna* family. It has 8 melody holes of 7-8 mm diameter, 7 of which are on the front part and one on the back part. Three of these front holes are closed with 1st, 2nd and 3rd fingers of the right hand and the hole at the back is closed with the right thumb, so the 4th finger is not used. Thus the other 4 holes are closed with the 1st, 2nd, 3rd and 4th fingers of left hand, while the left thumb is used to hold and balance the *zurna*. The performers that use their hands in reverse fashion are said to be **left-handed**.

The part which extends like funnel shape from where melody holes finish is called *the kalpak*, and in addition there are 7 holes of 5-6 mm diameter called **devil holes** (*cin deliği*), set in 3 lines (3 in the upper, 1 in the middle, and 3 in the lower part of the *kalpak*). which are filled with wax, paper or similar materials for tuning **purposes**.

**Fig. 3:** Seyhan Çalgıcı from Dibekdere, Milas, Muğla

[Photo: Ali Fuat Aydın, Ektirli, Karpuzlu, Aydın, 26.07.2008]

There is a part called *fasla* or *başlık* which goes through the body and connects the body and the reed (*kamış*) in the part where the *zurna* is blown. The reed is attached to a thin pipe called *lüle*. Also, for making breath reversing technique easier a disc-shaped piece called the *ağızlık* is attached over the *lüle*. The sound of the reed comes out the vibration of the opening and closing of an outer hole which has been formed into an ellipse by squashing the cylinder of the reed flat.

**Fig. 4:** Hüseyin Var from Germencik, Aydın

[Photo: Ali Fuat Aydın, Alangüllü, Germencik, Aydın, 13.01.2008]

The intonation of the *kaba zurna* is very difficult. Due to the wideness of the holes; sharps and flats could easily come out, by blowing technique, sound can be changed in an interval without changing the finger position, depending on the reed.

**Fig. 5:** Cemal Tosun from Şenköy, Koçarlı, Aydın

[Photo: Burak Keser, Kuyulu, Aydın, 01.2006]

It is known that *kaba zurna* was used in the *mehter* (military ensembles), *karagöz* (shadow theatre) and *orta oyunu* (comedy plays) and court music in the Ottoman period (*Ötken*, *Tamer*).<sup>1</sup> Today usually it is used in Thrace (*Edirne*, *Kırklareli*) and mehter, in Western Anatolia (*Aydın*, *Muğla*) and Central Anatolia (*Kırıkkale*, *Kırşehir*). Performing techniques in these regions are all different.

Like all the *zurna* family, in Thrace and in *mehter* generally the tonic is defined in accordance with the *makam* of the melody and the sound comes out in **5-finger** position accepted as *Dügah (A)* pitch. The tonic generally used in *Aydın* and *Muğla* is **7-finger**, also known as *kaba düzen* and the upper fourth of that is **4-finger**. In the region the tonics are defined as “**in x-finger**” or “**in x**” where x is the number of closed holes in the front part of the body and hence it is the number of used fingers for closing these holes, for example “in 3-finger” or “in 3”. Whatever the tonic of the makam is, all melodies are performed as transposed to these pitches.

**Fig. 6a and 6b:** *Dem zurnas*

[Photos: Ali Fuat Aydın, Alangüllü, Germencik, Aydın, 13.01.2008]

However, some slow zeybek melodies in local repertoires have their own tonics in the way they have been performed, a result of various circumstances. For example, in *Aydın*, performing *İki Parmak Zeybeği* in 2-finger, *Kuruoğlu Zeybeği* in 3-finger, *Soğukkuyu Zeybeği* in 4-finger, *Elifoğlu Zeybeği* in 6-finger; and in *Muğla* performing *İki Parmak Zeybeği* in 2-finger, *Soğukkuyu Zeybeği* in 3-finger, *İnce Hava* in 4-finger, *Eski Ferayi* in 6-finger have become traditional. However, today these tonics have been started to be abandoned. Present-day *zurna* players consider the ability to transpose melodies in any tonic as a sign of expertise, and the opposite as insufficiency. In the opinion of some of the musicians, these traditional tonics should be used.

In Thrace and in *mehter* the reed is attached to the body horizontally and it is positioned between the lips during performance. In *Aydın* and *Muğla* the reed is used vertically and put into the mouth till the middle part of the *lüle*, and played in the space. In this playing technique the *ağzılık* is attached to the *lüle* (*Ötken, Tamer*).<sup>2</sup>

Although in *Aydın* and *Muğla* one or more drone *zurnas* (*dem zurna*) are used (**homophony**); in Thrace and in *mehter* usually drone feature is used in *taksim*s and in all other melodies other *zurnas* company to soloist *zurna* or all *zurnas* play the melody all together (**heterophony**). In West Anatolia, in some regions except for *Aydın* and *Muğla*, for example in İzmir a similar heterophonic technique is used.

On the other hand **vibration** which is used often and a very significant technique in the performance of *kaba zurna* (it should not be confused with tremolo done with fingers) is done by beating tongue to the reed in the mouth space in *Aydın* and *Muğla*, in Thrace and the *mehter* it is obtained by shaking the reed upside down which is positioned between the lips with the help of the lips and the chin.

As regards the performing techniques of *kaba zurna* in Thrace and *Muğla*, Dursun Girgin, Dursun Külahlı and Veli Akay, *kaba zurna* musicians from *Dibekdere*, said “Thracians plays zurna like the clarinet, we play zurna like zurna. Playing our zurnas requires very strong breath and lungs”.

**Fig. 7: Blowing techniques in different regions a) Thrace b) Aegean**

[Photos: [www.angelfire.com/art2/otken/uflemeteknigi.htm](http://www.angelfire.com/art2/otken/uflemeteknigi.htm)]

The *davul* (drum) is used for rhythm in Aydın and Muğla. However, the *davuls* in Aydın and Muğla have smaller diameters than the other *davuls*. Their diameter is approximately 40 cm. Goat skin is stretched on both sides of a circular frame made of walnut tree. It is hung over the shoulder of the player with a strap, and it is played by beating the skin on the right side with a thick stick (*tokmak*) made of willow, and the skin on the left with a thin stick (*çubuk*) generally made of myrtle.

**Fig. 8:** A *kaba zurna* group from Dibekdere, Milas, Muğla. From left to right, Mustafa Külahlı, Sinan Çubukçu, Sadettin Girgin, Cumhuriyet Girgin  
[Photo: www.comakdag.com]

In a *kaba zurna* band (team) in Aydın and Muğla, while the soloist *zurna* plays the melody, *dem zurnas* usually blow in the tonic and the *davuls* handle the rhythm function. Although *kaba zurna* bands could consist of 3 people (1 soloist *zurna*, 1 *dem zurna* and 1 *davul*) most bands consist of 5 people; 1 soloist *zurna*, 2 *dem zurnas* and 2 *davuls*. According to the activity, one can meet larger bands (1 soloist *zurna*, 3 *dem zurnas*, 4 *davuls* etc) or indeed more than one band. Thus, they can perform in activities characterised by long duration (3-4 days) such as local wedding ceremonies, they can rest between performances; or more than one band can perform at the same time.

**Fig 9:** A *kaba zurna* group from Dibekdere, Milas, Muğla  
[Photo: Ali Fuat Aydın, Ektirli, Karpuzlu, Aydın, 26.07.2008]

Today it is seen that the number of people who make their living by playing *kaba zurna* is decreasing significantly, due to the bad economic conditions. In local wedding ceremonies, as an alternative to *kaba zurna* bands, in the bridegroom's house or in the bride's house, there are *ince çalgı* bands, also called *bando*, which can make music, and in recent years keyboard performers have been providing the music; wedding ceremony organisers who do not want music because of their religious ideas make their weddings with Islamic ceremonies. The development of CD technology and media tools have also had negative effects on local musicians.

Although musicians have difficulties in finding jobs, since the wedding customers cannot afford the money for the musicians, or can afford less than expected, the main reason for this is the increase in the cost of the wedding with the consumption of alcoholic drinks. Also the wedding organisers may not wish to call musicians because they do not want alcohol in the wedding for religious reasons; and some wedding organisers do not choose *kaba zurna* bands because they do not consider traditional weddings modern.

In addition, for musicians the main income is the tips they take from the audience and the money given to the people who are dancing – called *orta parası* (arena money) – rather than the payment taken from the wedding organisers. Furthermore, it is said that previously musicians used to pay wedding owners for playing, and then took arena money in weddings (Abdurrahim Karademir, personal interview, 2001).

If the *zeybek* samples collected in Western Anatolia are examined, one notes the existence of a regional repertoire. The repertoire used by local musicians, which is transmitted orally through generations in a “chain” (*silsile*), involves a master-student relationship (*meşk*). This is the reason of why the soloist *zurna* in a *kaba zurna* band is called *usta* (master), while the *dem zurna* is called *çırak* (apprentice). However, for *davul* performers, a similar nomenclature seems not to exist.

Just as one master should have more than one student, a student could learn traditional repertoire from more than one master. During the transmission the first step consists in committing the melodic and the rhythmic patterns into memory; the second step is performing these patterns. At this point the *üstlup* (style), which could be described as the performance in one's own style within tradition, comes to the scene.

**Fig. 10:** Ertaş Demir and his group from Selimiye, Milas, Muğla  
[Photo: Ali Fuat Aydın, Alangüllü, Germencik, Aydın, 13.01.2008]

Local musicians acquire the musical knowledge by means of a cultural transmission from their fathers through a master-student relationship. For the musicians being a musician is not a hobby or a leisure time activity. For this reason, local musicians are the key sources in order to understand and analyze the acquisition term in transmission of the tradition. In local tradition, musical education is simply informal and is not based on a written text or a theory. Local musicians are the people who learn, teach and transmit the local musical heritage on a practical level.

The products in the regional repertoire are orally transmitted and that is why the performers did not need to use a music notation technique since their music has not evolved in a way similar to polyphonic music.

In an environment where that repertoire is orally transmitted and music notation is not used, it is obvious that the transmitted products may differ to a greater or lesser extent, the variants of the products may occur, even at the same time the different versions could exist. Since the concept of originality of the traditional products does not make much sense, it is not possible to determine which version is the original one.

“The different versions of a performed piece depends on the willingness or mood of the performer, social status or demands of the audience in moments. this situation is indication of dynamism in terms of tradition. Thus, less or more different new versions of the piece could be produced at each performance. So all versions which are produced in such a tradition are equally valid. These produced variants and versions certainly have something in common. In each period these have to suit the musical taste of the period.” Cem Behar (1998:81)

It should not be forgotten that some pieces could not be transmitted through generations since any music notation is not used, however, it means choice, elimination and innovation of the products at the same time.

For a musician; it is a significant advantage to have a well-known master. Usually they start to make music at the ages of 7-8. Although *zurna* or *davul* is chosen according to present needs and personal choices, usually they start with *dem zurna*. At that point, the children want to play the instrument that is played in their families and generally it is the instrument that their fathers play. On the other hand, it should not be ignored that a master can only teach the playing of an instrument that he can play (*Dursun Külahlı, personal interview, Dibeckdere Köyü-2007*).

Due to the need for very strong and continuous breathing for playing *zurna*, the technique called **circular breathing** is learnt by making students blow into a water-filled glass with a tube, keeping the bubbles coming while also breathing. Afterwards, the same technique is applied on *dem zurna*, some melodies are tried and pass through *zurna*. However, a player can be a master and can start to perform in wedding ceremonies after he completes his military service, in other words at the age of 21-22. Another point is that in the region the majority of the musicians are relatives and the age of marriage is below the average of 17-18.

During the circular breathing, the performer blows the instrument, and takes breaths through his nose at the same time, so that circulation is provided. Since the tonics are blown by *dem zurnas* continuously, circular breathing is very significant for the continuous performance of the music. To be able to do this process continuously, the reed used should be soft. Since the reeds used for soloist *zurnas* are harder than the ones used for *dem zurnas*, it is not possible to do circular breathing continuously. That's why in the performance of a soloist *zurna* there could be rests because of the melody structure.

A good *zurna* performer should have good hearing besides strong breath and fast fingers. So a *zurna* student learns local repertoire from the performances of his master. Also via

CDs he has the chance to listen to the performances of other masters that he cannot listen to in person.

In *davul* performance, a good sense of rhythm beside a good hearing is needed. In the learning phase, the melodic and rhythmic patterns in the local repertoire are learned; in other words, he learns which rhythmic pattern is used in which part of the melody. As the *davul* player progresses, he starts to play the rhythmic patterns with more *velveles* (**rhythmic ornaments**); as *zurna* performer is learning, he starts to use **melodic ornaments** in melodies; in other words, they start to show their individual talents and styles.

A *davul* performer should know melodies as much as a *zurna* performer does, and should be able to follow the melody of the *zurna* performance; especially in slow zeybek performances he also follows the dancer. For that reason, slow zeybeks are shown as the most difficult melodies to be performed. In slow zeybeks the relation among *zurna* performer, performer and the dancer provides us a melodic and rhythmic **flexibility**.

Although they are connected to all kinds of cultures; the regional repertoires of *Aydın* and *Muğla* are very different from each other, except for a few pieces held in common, and we have seen that local musicians are keen to protect and keep on their own traditions in the face of the development of media tools. Inevitably, daily-popular melodies are taking their place in the repertoire, in parallel with the demands of the audience.

In a later article, an attempt will be made to analyze samples transmitted via master-student relationship in terms of melody and rhythm, and various points about the differentiation process will be noted.

1. Aydın Soğukkuyu Zeybeği. Hüseyin Doğan. Çokran Plak. Bursa-197?.
2. Aydın Soğukkuyu Zeybeği. Sadettin Doğan. Ege Video. İzmir-1987. MC B3.
3. Aydın Soğukkuyu Zeybeği. Tibet Var. Servet Yapım. Denizli-200?. CD Track 9.

If these examples are analyzed, it is seen that the performers in a chain (*silsile*) have been performing the same melody by using traditional melodic and rhythmic patterns in their own styles. Furthermore it can be said that the tempo has become slower and the traditional tonic has not been used in recent performances (Table-1).

No	Form	<u>Tonic</u>	9 (s)	=3 (s)	+2 (s)	+2 (s)	+2 (s)	Tempo
1	2A+2A1	4	15	4'50"	3'50"	3'50"	3'50"	36
2	1A+2A1	4	18	6'00"	4'00"	4'00"	4'00"	30
3	2A+2A1	7	26	9'00"	5'50"	5'50"	6'00"	21

**Table 1** – The parameters related to three different performances of **Aydın Soğukkuyu Zeybeği**.

## REFERENCES

- Akdoğu, Onur. *Bir Başkaldırı Öyküsü–Zeybekler – Tarihi-Ezgileri-Dansları*. İzmir, 2004
- Aydın, Ali Fuat. *Kuruoğlu Zeybeği*. Hal/ Sayı 3, s.44 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 1997
- Aydın, Ali Fuat. *Muğla Yöresinden Bir Derleme Problemi: İnce Hava-İnceoğlu İkilemi*. Halkbilimi / Sayı 14, s.51 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2001
- Aydın, Ali Fuat. *Milas Zeybeği-Rodos Ada Zeybeği*. Halkbilimi / Sayı 15, s.94 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2001

Aydın, Ali Fuat. *Geleneksel Türk Müziğinde “Usta-Çırak” İlişkisinin Gerekliği Üzerine Çeşitli Görüşler.* / Sayı 16, s.34 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2002

Aydın, Ali Fuat. *Aydın Kadioğlu Zeybeği.*Halkbilimi / Sayı 17, s.52 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2002

Aydın, Ali Fuat. *TRT THM Repertuarında Bulunan Üç Ayrı “Aydın Zeybeği” Üzerine.*Halkbilimi / Sayı 18, s.55 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2003

Aydın, Ali Fuat. *Aydın Çine ve Karpuzlu Yörelere Ait Üç Farklı “İki Parmak Zeybeği” Üzerine.*Halkbilimi / Sayı 19, s.46 / Orta Doğu Teknik Üniversitesi Türk Halk Bilimi Topluluğu / Ankara, 2005

Hoşsu, Mustafa. *Geleneksel Türk Halk Müziği Nazariyatı.* İzmir, 1997

Karademir, Abdurrahim. *Zeybek Dansları.*Halkbilimi Araştırmaları 1.Kitap. İstanbul, 2003

Karademir, Abdurrahim. *Dünden Bugüne Zeybekler ve Oyunları.*Efeler. Haz. Ersal YAVİ. Aydın, 1991

Mirzaoğlu, F.Gülay. “Güdüşlü'nün Çeşmesi”: Bir Türkünün Yaratılış Hikayesi Bağlamında Tema, İcra ve Müzikal Yapı.Türkbilig 2003/5:86-93. Ankara, 2003

Ötken, Tamer. <http://www.angelfire.com/art2/otken/giris.htm>

Öztürk, Okan Murat. *Zeybek Kültürü ve Müziği.*İstanbul-2006

Öztürk, Okan Murat. “Ağır Zeybek Usul”: *As a Definitive Structural Element of Zeybek Music and its Analysis.* London, 2007

#### NOTES

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<sup>1</sup> <http://www.angelfire.com/art2/otken/kullanim.htm>

<sup>2</sup> <http://www.angelfire.com/art2/otken/uflemeteknigi.htm>