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## **The Culture and Language of Whistle of Turkish People (Giresun)**

**Alina S. Gaynutdinova<sup>1a</sup>, Aliya Mutallimova<sup>2b</sup>**

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### **Abstract**

In connection with the living environment, people have used all kinds of communication. One of the ancient modes of communication is whistling. Many people encoded their messages using this method. However, there are peoples and tribes that have developed this language to the level of communication. One of them is the Turkish people. The present study aimed to investigate the language of the whistle of the Turkish people. Owing to globalization and the fear of losing this language, many organizations in Turkey have decided to take control of the language and try to prevent its disappearance. Thus, the language of the whistle has also been taken under the protection of UNESCO. This step has given the language a new lease of life, for many organizers trying to help it survive in the globalization of the world have appeared. Scientists persist in studying this language, and the residents continue to use their traditions and thereby attract new tourists.

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<sup>1</sup> Associate Professor, Email: [s.gaynutdinova@yahoo.com](mailto:s.gaynutdinova@yahoo.com) (Corresponding Author)  
Tel: +7-9600-398117

<sup>2</sup> PhD Candidate, Email: [aliya.sharafullina@yobu.edu.tr](mailto:aliya.sharafullina@yobu.edu.tr)

<sup>a</sup> Kazan Federal University, Russia

<sup>b</sup> Bozok University, Russia

## 1. Introduction

**T**urkish is a language family of at least 35 documented languages spoken by the Turkic peoples. The Turkic languages originated in a region from East Asia that stretched from West China to Mongolia, where Proto-Turkic Turkish is thought to have been spoken (Johanson, Csató, & Karakoç, 2020) from where they expanded to Central Asia and farther west during the first millennium (Ganiev, 2006). In our article, we will consider the non-verbal form of communication, namely, “İslık dili (the language of whistle)”. The purpose of our study is to reveal the features of the language of the whistle. The whistle was usually used by people living alongside nature, such as farmers, shepherds, etc. In different eras, the whistle was perceived differently and used for different purposes. For example, Chinese sources speak of a whistle for meditation. On the ships and in Amazonian forests, they used to give commands to each other and also to exchange information in order to get ahead of the invaders. Moreover, the whistle was the language of communication of individuals (Verhoef, 2012).

Communication via whistling can be found all over the world. They are about 70 in number. Some of them are in Mexico (Masatec and Chinantec languages in Oaxaca), in the Canary Islands (Silbo Gomero language on the island of Homer) and in France (in the village of Aas on the Pyrenees), in Greece (Antia village), as well as in Turkey. In Turkey, this language is spoken in different parts of the country but has gained great fame in the village of Kuşköy (Kushkoy) in the Chanakchy district of Giresun. The village of Kuşköy, meaning “Bird Village”, is located in the Çanakçı district of northeastern Turkey. For centuries, the people of this village and the surrounding areas have been in contact with the whistle.

It is unfortunate to say that this old tradition is disappearing. A recent documentary on the subject shows how a villager named "Uncle Orhan" kept this ancient tradition alive by teaching it to local children (Ostwald, 1959). People also call this language the language of birds / Kushdili. It also has other names symbolically associated with whistling – ışıklık, ışılık, ışıldık, ıklık. Besides, with

reference to origin, the language is also called the “çoban dili (shepherd's language)”.

## 2. Theoretical Framework

Many researchers have studied the subject of this article. The first academic investigation on the Turkish Whistle language (WL) was performed by Busnel and Classe (1976). The authors performed identification tests in Kuşköy with spoken and whistling words, including separate sentences and words. Diagnostic tests were performed in terms of word, age, sex, and identification. Details of these experiments can be found in Busnel and Classe (1976). Güntürkün, Güntürkün, and Hahn (2015) mention that WLs represent an experiment of nature to demonstrate the well-accepted view that language comprehension is partly governed by the left hemisphere in a relatively input-fixed manner. In fact, the left hemisphere superiority has been reported for atonal and phonetic languages, click vowels, written language, and sign language. Whistled Turkish usages complete lexical and syntactic information from phonetic Turkish, turning it into a whistle to convey complex conversations with limited whistling over long distances. Perception of whistling language relies on the help of the asymmetrical hemisphere, which is associated with a decrease in the left and a relative increase in the encryption mechanisms of the right hemisphere. The results show that a language that is in high demand for normal right hemisphere audio encoding causes a fundamental change in language asymmetry. Thus, the pattern of language asymmetry is formed in an important way based on the physical characteristics of the vocabulary input.

Ozaydin (2018) offers the audio and linguistic features of the Turkish WL. The WL is a communication way commonly used for telecommunications in some parts of the world. In a whistling speech, the auditory properties of spoken languages are shifted. Thus, whistling languages have some of the characteristics of phonetic speech with their own phonology, grammar, vocabulary, and pronouns. There are several places in the world that use this whistling communication style. Kuşköy in Turkey is one of these places. Although some research has been done on the Turkish WL, unfortunately, there have been a limited number of scientific publications in

this field. On the other hand, the results of the research offer astonishing results, including the fact that people can still continue to say some words when whistling, and there is a great deal of comprehensibility when communicating. The results of this study showed many other valuable features of the Turkish WL as well.

Meyer and Gautheron (2006) state that, the Turkish language is the second language that has the largest number of consonants and vowels. Since its whistling form is still practiced in the village of Kuşköy, and by shepherds who roam the high plateau in summer, it may offer reliable data for accurate analysis. Even though numerous efforts have been made to untangle the Turkish whistle system, they have not explained how phonetic vowel reduction is balanced by Turkish phonological coordination rules. In addition, none of them offered details on how to combine amplitude and frequency to produce consonants.

It should be noted that, in addition to their own data, Meyer and Gautheron (2006) used the data collected and reported in Kusköy's (1967) and Busnel and Classe's (1976) studies. This large corpus of consonants and vowels allows for an unprecedented statistical analysis for the study of WLs.

### 3. Methodology

The advantage of the whistle in speech is due to its natural and simple tone. Whistle screws are focused on a narrow bandwidth, which is the most selective and sensitive auditory band (Busnel & Classe, 1976; Pishghadam, Ebrahimi, & Derakhshan, 2020).

The whistle is often practiced either with one finger to achieve high power for long-distance speaking or directly with the lips for short-distance discussion, sometimes with a leaf. Whistles are shown with a frequency adjustment of about 1000~2000 Hertz. At a distance of one meter from the whistle, they can reach a range of 130 decibels. Amplitude level changes follow approximately the frequency. This indicates that the whistle must upsurge the air pressure to upsurge the sound of the whistle.

The concentration of information is relatively short compared to spoken language. This

describes both its usage in noise or isolation conditions and the effectiveness of whistles over long distances. Such features increase the signal resistance to reverberation. In the La Gomera Mountains, whistles may travel up to 10 km, but the messages are still intelligible, even if the signal is broken at this distance. (Busnel & Classe, 1976).

In short, whistling forms of language seem to encode the vital part of human language with a seemingly simple signal formed by the main frequency band, which survives long-distance propagation.

WL is a natural way of communicating that is commonly used for interaction in confidentiality, telecommunications, sending messages in noisy places, or brief communication. This kind of whistling communication provides long-distance transmission and exchange to a potentially unlimited set. Individuals encode the auditory properties of spoken languages by moving the main elements of spoken sounds (Rialland, 2005). The framework of the study is the research of the language of the whistle as a whole, as well as the disclosure of its similarities with the Turkish language. To achieve this goal, the raw materials related to the WL have been studied. Due to the fact that this language has acquired currency by means of the media, the main sites related to the Turkish people of the village of Kusköy are studied.

### 4. Results

When converting a spoken language to a whistling form, there are two types of WL in the world: whistling for ringtones (it mimics elevation lines) and formal whistling for non-tonal languages (and mimics shapers). In both cases, people use the audio features of whistles to convey their messages while having the vocabulary, syntax, and grammar of the spoken language. Despite the reduced audio and sound, whistling speech is still understandable to trained speakers. Spectral analysis of a non-tonal WL can show how the distribution of ingredients to a whistling form is reduced. Because the acoustic amplification of a whistling signal occurs primarily in the oral cavities in front of the reduced acoustic system, whistling speech signals have frequency patterns that are similar in several respects to the second form of speech. In

addition, in non-tonal languages, whistles are intended to express every vowel and every consonant during an interview (Meyer, 2015; Rialland, 2005).

The WL frequency is modulated by changing the volume of the resonant cavity corresponding to the expression of the equivalent speech form. Tongue and epiglottis movements affect the regulation of vowels and consonants (each vowel, as a relatively stable narrow (or simple) band frequency, whistles at a frequency range specific to each vowel (including a variety of vowel articulation). Changing the frequency of the vowels within the sentence does not change the distribution of the level of the vowel intervals because it acts as a secondary feature and participates in the highest part of the distance of the related vowels. Diphthongs have a continuous modulation from the first to second sound frequencies, with considerable frequency depth for different kinds of vowels. Expressing consonants creates simple frequency forms when whistling. Whistle silent letters, adjust the frequency and amplitude of a whistled speech. As a result, the signal-to-noise ratio in WL reception is large enough for good perception. In addition, its underlying frequency bandwidth and dynamic range amplitude are reduced compared to spoken speech. Long whistle lectures are more frequent than short lectures. In WL, the complex frequency spectrum of sound is produced in a step-change produced by a narrow band of whistle frequencies (Meyer, 2007a; Meyer, 2007b).

The word *whistle* in a dictionary means a clear, high-pitched sound that is artificially produced by forcing the breath from the mouth, using the tongue, teeth, lips, cheeks, and fingers (Ushakov, 2014). Concerning Kushdili, it is formed by producing from a whistle a sound associated with a word through which communication occurs (Karaman, Ateş, & Sayın, 2019).

The association with the sound being uttered gave its name to Kushdili. Since this language during pronunciation is similar to the song of birds close to the nightingale subspecies, Kushdili has been used as a means of communication for centuries. The appearance of this language is not precisely known. However, it is assumed that language begins in the history of the emergence of native

speakers. Unfortunately, no written documents, records, or resources on this topic have been found. Nevertheless, the villagers know that it has sprung in connection with the work of the shepherd and passed from generation to generation. The residents do not just “whistle”, but talk via whistling since the whistle, piping, is not only used but has been developed to the stage of communication. The geographical structure of the region also contributed to this because the residents had to communicate over a long distance. That was due to the fact that their village was somewhat scattered, uneven, and steep. The village of Kushkoy is also divided by the Chanakchy creek. Due to the noise of the creek, people screaming and calling each other together with the sound of a stream not only could not understand each other, but it was challenging to shout out this noise. Kushdili helped out the inhabitants, which facilitated communication at a distance. Moreover, the whistle does not harm the vocal cords so much like a scream over a long distance. The sound of a whistle is heard in a common area of about 1-2 km, up to 5 km in the mountains, and less in the forests. If you use good technical skills of whistling, then its sound can reach about 10 km. Thus, this language had been discovered as a method of communication when there was no telephone communication.

The discoveries of this language in the scientific area date back to 1956. Many studies of scientists are associated with this date. It all started in 1960 when the village of Kushkoy separated from Karabork and gained its independence. Then, Kushkoy did not have its own school. Therefore, Hamdi Dede, a teacher who tried to teach his students in a goat shed, asking for help, wrote a letter to the Association for Communication and Assistance to Rural Teachers, established in Istanbul. In the same year in Istanbul, the Milliet newspaper launched a campaign to help rural schools through education mobilization. The mobile company also supports a campaign to build schools in villages. Within the limits of this campaign, the building of a school in the village of Kushkoy had begun. In 1963, the school opened for the opening of which journalists arrived. Journalists drew attention to the fact that local residents communicated using the language of the whistle. Thus, this language is glorified on the pages of

newspapers, first of local and then foreign ones.

Since 1990, they have shot a lot of commercials related to Kushdili and documentaries and feature films. In 1995, Japanese television, which was searching for ideas for new television programs, found inspiration in Kushdili. There was a reviving of interest in this language after the previews of the opening of the school in the village of Kushkoy in 1995. In subsequent years, Kushdili turned out to be in the spotlight of TRT, Turkey's private television channels, and foreign television. The residents of Kushkoy, who were pleased with this interest in 1997, began to organize Kushdili Festivals. Since 1997, the festivals have been held every year in the last week of the month of June. These days, the residents of Kushkoy host the competitions among the children and the adults (<https://www.haberturk.com>).

The production of Turkish whistle speech is described in this article as follows: Whistle is produced by sending air from a small groove formed at the tip of the tongue, and spoken words are adjusted by placing this whistling wave, such as sending a signal on a high-frequency carrier wave. As a result, a whistling speech signal is generated by a stream of compressed air at the entrance to the oral cavity. For this reason, the sound is sent with maximum energy from the groove to prevent further air leakage. Thus, the melody of whistling sentences, like the normal speech form, is satisfied by the lower form of the sound, and the emphasis of the word is satisfied with the necessary energy. With all these characteristics, Turkish WL can be described as an incomplete Turkish form. Consequently, to reproduce the spoken words, the completion approach is used by the listener (Başkan, 1968).

In the same year, the residents of Kushkoy founded the Association of Cultural Tourism and Vital Activities. This association works together with the city administration of Chanakchy District and the municipality of Chanakchy to conduct events with a focus on Kushdili and thus supporting the language. On February 13, 2013, Kushdili was included in the list of the Intangible Cultural Heritage of Humanity and thereby gained fame and

protection from UNESCO (<http://aregem.kulturturizm.gov.tr>).

On January 11, 2017, college students from the Middle East Technical University created an Android-based digital form of the dictionary "İslık Dili Sözcüğü (The Dictionary of the Language of Whistle)". The application developer is Emre Cholak. Today, this dictionary consists of more than 500 words, phrases, and about 100 short sentences that have audio playback. This work needs to be polished and error-free, but despite pain points, the dictionary is original and the only one of its kind.

Today, the Kushdili language is being restored to life. It becomes popular even among young people. In this connection, on the Internet, you can find both the lessons from amateurs and the lessons that took place in educational institutions. For example, in 2017, Kushdili was taught at school from the first grade (Fazlyeva, Sheinina, & Deputatova, 2016).

In 2018, the study of this language was initiated. In 2019, it was planned to introduce in the educational program at the Faculty of Tourism of Giresun University in the form of facultative studies. Thus, on June 8, 2019, this lesson was introduced into the program.

Kushdili is one of the few languages of whistle in the world that still remains Turkish (Yilmaz, Tarasova, & Ashrapova, 2016). The whistle replaces voice in the same way that written words replace speech in languages over the world.

Many countries have begun to learn the language of whistle in the scope of science. For example, at the Ruhr University of Bochum (Germany), a novel study indicates that the brain processes Kushdili far otherwise than spoken Turkish (Safin, Kolosova, & Bychkova, 2016). This study challenges the conventional wisdom about the effect of language on brain function. Namely, the left hemisphere of the brain plays a much more active role than the right one in the processing of the language, whether it is spoken or written. Since whistling languages use melody to convey their meaning, scientists have asked themselves if the right hemisphere, which processes melodic tones, can play a much larger part than usual. Güntürkün et al. (2015) and his colleagues conducted a new

experiment to investigate this hypothesis. Their results indicated that the participants are “completely unaware” that they hear different signals, he adds (Güntürkün et al., 2015).

To see if the brain processes the whistle in this way, the team repeated the experiment, playing the syllables of Kushdili for local whistlers. All of them showed dominance in the left hemisphere for spoken Turkish. Nevertheless, when the team fed the whistling Turkish syllables into the headphones, the two hemispheres became “balanced”, while the subjects identified the syllables from the left and right ears with approximately the same frequency. This suggests that the right hemisphere plays an increasingly important role in understanding whistling languages than spoken languages. According to Meyer (2015), for this very reason, the asymmetry commonly observed in language processing disappears. But the results, he said, are convincing.

Güntürkün et al. (2015) suggest that the findings can help treat people who have lost the ability to speak after a stroke. People who lose their speech after a stroke in the left hemisphere can sometimes learn to sing their words. In the same way, they report that people with a stroke in the left hemisphere can still use the whistling Turkish language. However, this will require further research on Kushdili. The number of those who communicate this language is now about 10,000, and it is rapidly decreasing as mobile phones replace communication by whistling, and they began to be used as the primary means of communication. According to Güntürkün et al. (2015), one of the reasons for the disappearance of Kushdili is the fact that it is more fruitful to whisper or communicate with your lover using a mobile phone than to do it via whistling, for the whole valley can hear the whistle.

In the village of Kushkoy, the children begin to speak the language (to whistle) from the age of six. However, active communication in the language of Kushdili begins from the age of 9-10 years. Based on the practice conducted in the village, it has been revealed that the sex of whistlers can be distinguished by the sound being emitted (Başkan, 1968).

The scientists conducted an experiment with the residents of the village. They tried to

pronounce the loan words of the Turkish language by means of the whistle, such as *kasaba* (town), *başkent* (capital), *entelektüel* (intellectual), etc. The understanding of these words became difficult; then, there was an attempt to pronounce meaningless syllables. Such as *da*; *use*; *bi*; *ür*; *Edu*. Indeed, an interlocutor tried, by putting together these syllables, to discern the familiar words, but the efforts were a failure. Such experiments have been conducted by scientists more than once. As a result, they have found out the essence of the language of Kushdili. The language of Kushdili is formed with the vowels “*i ö o*”, as well as the consonants “*f ç k*” (Başkan, 1968).

The language of whistle falls into six groups:

1. “*ı*” and “*ü*” (“*ı*”)
2. “*e*” and “*ö*” (“*ö*”)
3. “*ı*”, “*u*”, “*a*” and “*o*” (“*o*”)
4. “*p*”, “*b*”, “*f*”, “*v*”, “*h*” and “*m*” (“*f*”)
5. “*t*”, “*d*”, “*ç*”, “*c*”, “*s*”, “*z*”, “*r*”, “*l*”, “*ş*”, “*j*”, “*n*” and “*y*” (“*ç*”)
6. “*k*” and “*g*” (“*k*”).

Busnel and Classe (1976) described videofluoroscopic images of spoken and whistled phrases in the Turkish language; the observed changes in vocal tract configuration support the model of an oral resonant cavity with changes in frequency modulated by the anteroposterior movement of the tongue (Azola, Palmer, Mulheren, Hofer, Fischmeister, & Fitch, 2018). The physiological form of the whistle corresponds to the pronunciation of both vowels and consonants: “front, mid, back”. Since the vocal cords do not vibrate during whistling, soft consonants cannot be obtained, and when the lips do not close, (*p*, *b*, *m*) can form only (*f*). Most voices melt in the sound (*ç*) in which this movement of the tongue has been created, since the cutter of the tongue, which provides modulation when whistling, takes on the greatest the charge of sticking to the palate. Similarly, since the lips are slightly blunt, and the whistle runs parallel to the slight raising of the tongue behind the mouth cavity, the state of the sound organs (*o*) approximates the consonant. As you can see from the picture above, the entire charge of speech sounds are the sounds (*o*) and (*ç*) (Başkan, 1968).

The one who hears the whistling sound only decodes the acoustic properties of what is heard in accordance with three vowels and

three consonants. The same also applies to the speaker. They speak on the basis of these three vowels and three consonants. For example, *Yarın/çoçoç sabah/çofof bana/foço imeceye/iföçöçö gelir misin/çöçifçiçifçiç?!* (Are you coming to my collective work (pasture) tomorrow morning?) (Başkan, 1968). The above example shows how the sentence is formed and how much the pronunciation has changed in the transcription of the word. However, when these words are being pronounced, you can also understand what the interlocutor is talking about. For instance, the scientists wrote a transcription of the words of Kushdili and let the inhabitants of a neighboring village read it. As a result of this experiment, it was found that the Turks could understand the encrypted message in transcription (Başkan, 1968).

## 5. Discussion

The language of whistle or Kushdili is based on the same melodies as spoken Turkish. The language of whistle uses the same grammar, and the sounds are pronounced with the same intonation that is inherent in the Turkish language. It is interesting that in Turkish, there are 32 letters and the corresponding number of sounds, which is in contrast to the language of the whistle, which has only six phonetic sounds. Actually, Kushdili is not a direct reflection of the Turkish language, but only its “part”. It is essential to study the mechanism of whistling of the residents of Kushkoy in order for the WL to turn from the “part” into the “full”. The origin of the language of the whistle was purposeful for short long-distance communication. If we parse the speech of the inhabitants, we will see that what seems to be “not full” for strange listeners is “superfluous” for the residents themselves. Let us consider the sentence “ben geliyorum (I am going)” in terms of the grammar of the Turkish language. In this sentence, a “redundant” component will be “ben”, for the ending, “um” already stands for “I”. Therefore, if there is only one word, “geliyorum”, one will understand that “I am going” (Kolosova, 2016). However, this state is considered to be “not full”, but this sentence uttered via the language of the whistle will be understood by those to whom it is directed. If it is not comprehended, then additional information will help out. In Turkish, for the correct spelling of considerable detail, especially in the course of the telephone

conversation, it is asked to be spelled, thus encrypting the given word. The same form of explanation is used in the language of the whistle.

WL networks are a reliable human indicator of the vitality and traditional lifestyles of the cultures that have developed them. The gradual disappearance of activities such as shepherding and the aging of the rural population is one of the main reasons for the extinction of the whistling joint form in France (Aas). Most WL networks are almost extinct due to the combined effects of local culture depreciation and rural migration. The gradual disappearance of whistling speech and its scientific interest underscores the fact that both linguistic biodiversity and cultural and scientific richness are declining (Meyer & Gautheron, 2006).

Kushdili is the language of whistle that has been researched and developed today. Also, events are held where people are introduced to this language, thus interesting both young people and the adult population. Many festivities are hosted to attract local and foreign tourists, as well as new projects, are being built, and there are plans to study the details of this language, which still keeps many secrets. For example, Güntürkün et al. (2015) planned to study the brains of whistlers using an electroencephalogram (EEG). The electroencephalogram is a widespread non-invasive method for monitoring the brain. It is based on the placement of metal electrodes on the scalp that measures the small electrical potentials created by nerve function. Its main advantages over other brain imaging methods are that it has a very high resolution; it can track events inside the brain with millisecond accuracy, and it is portable. It can be done in a clinic or a laboratory. As a result, it is a widely used sensory approach to a range of health care programs from epilepsy diagnosis to emotional monitoring. Perhaps in the future, after researching all the possible details, there will be an opportunity for stroke sufferers to learn the language for communication and have a means of communication.

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