Imitation of animal sound patterns
in Serbian folk music

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Background in evolution of music. Many parallels can be drawn between human music and animal sounds in traditional Serbian folk songs and dances. Animal sound patterns are incorporated into Serbian folk songs and dances by direct imitation for different ritual purposes. Popular dances are named after animals.

Background in folkloristics. The hypothesized relationship between humans and other members of the animal kingdom is reflect in theories that consider imitation of animal sounds as an element from which human language developed. In Serbian folklore, a frequent trope is the eternal human aspiration to speak to animals and learn their language. Serbs maintain an animal cult, showing the importance of totem animals in everyday life and rituals.

Aims. The main aim of the article is to highlight some of the similarities between humans' and animals' communication systems, and to discuss this in light of the possible origins of music and language. We aim to show that there is an unbreakable connection between humans and other animals, and that their mutual affection may be because humans and animals have, since antiquity, lived in a close contact. Humans imitated animals' sound patterns and incorporated them into their primordial songs and dances for ritual purposes. As traditional Serbian culture is particularly nature-oriented, we can still find many elements that reflect animal sound patterns in their music folklore.

Main contribution. An audio-comparative method shows similarities between animal sound patterns and music qualities in Serbian folk songs and dances. Howling wolves can be recognized in Serbian folk singing in singing which is typical of the mountainous area of Homolje in Eastern Serbia. The cooing of doves bespeaks of the cadenza on the second scale degree, which is present at the ends of numerous Serbian folk songs. Doves sometimes coo in a complex-sounding meter (5/8), in which many Serbian folk songs are sung. Dotted rhythms are recognizable in rooster songs, and we can also find it in some Serbian folk songs and dances. The sound motif of the Istrian crane has the interval of an augmented fourth, which is recognizable in the ambitus of the downward tetrachord of the Balkan musical scale as well as the Istrian scale. The gallop of a horse, as an archetypal rhythmic pattern, is present in numerous Serbian folk songs and dances. In some Serbian songs we can hear the regular alternation of 3/4 and 6/8 time signatures, which is the typical metre of the song of the cardinal bird. (It is assumed that the cardinal bird, or one with a similar metrical song pattern, used to live in Serbian territory.)

Implications. Animal sound patterns are clearly articulated in the musical motifs of Serbian folk songs and dances. Future research could study its iambic patterns, seemingly linked to the expiratory nature of many animal sounds. It is also tempting to think about the origin of music patterns as producing and reproducing aspects of animal vocal apparatuses. Musical elements of animal sound patterns could be used as the initial educational method for understanding the basic musical parameters of this music.

Keywords: Animal sound patterns, Serbian folk music
The origins of music

In bringing people together, a primary function of music in all societies is collective and communal; indeed for thousands of years, people have sung and danced together (Storr, 1992: 15). Many theories about the evolution of music suggest that since traditional tribal music is almost always made in groups where everyone participates and dances, music must have had a group-level function rather than an individual one (Miller, 2000: 350). However, music is arguably not only a human phenomenon: animal 'singing' is very prevalent, and possibly represents codified action and ritual (Martinelli, 2005: 2). Music, as well as language, can not be dissociated from movement (Mithen, 2006: 139). The early humans' communication system used, especially for the expression of emotional states, not only gesture, but also dance and the extensive use of rhythm, melody, timbre and pitch (Mithen, 2006: 172).

It is possible to believe that music preceded, rather than followed language (Martinelli, 2005: 3). Plato and Aristotle claimed that music originated as the representation of natural sounds. Jean-Jacques Rousseau wrote that the first language was a kind of a song (O. Sacks, 2007: 242). Famous linguist Otto Jaspersen believes that language began from music-like expressions (Mithen, 2006: 170). But, did song precede speech, or did both develop simultaneously? (Mithen, 2006: 242). And, did humans develop from animal 'music' or did animal and human song develop in parallel? (Mache, 2000: 483)

Musical interaction between man and nature is most obviously expressed through the simple imitation of natural sounds, including sounds of animals' (Golemovic, 2005: 242). Such imitative songs are indeed present in many cultures. For example, Mongolian people use voices or instruments to imitate mountain goats and wolves in hunting songs (Pegg 2001: 235). A number of cultures specify that their music comes from animals. Tuvans say “our music all began from imitating the sounds of animals” (Levin 2006: 125). The early Chinese believed that humans transformed raw sounds of animals and so created music (Doolittle, 2008). Today, Suya people learn songs that reproduce animal sounds (Seeger, 1991: 23). We can speculate that imitating animal sounds may have been present in the earliest human music, and may even have been its origin. It might have been that animal sounds were directly imitated for practical purposes or used as ritualized imitation for magical purposes (Doolittle, 2008).

The role of animal songs in music has varied considerably from culture to culture and from time to time. Nevertheless, many cultures readily recognize a deep connection between human music and animal song, and often believe that humans learned music through listening to animals (Doolittle, 2008). Of course, we have no way of knowing what humans' earliest songs were like, but it is believed that many of them involved imitations of animal sounds (C. Sachs, 1962). We can find evidence for this in currently existing nature-oriented cultures, both in the West and elsewhere, where such songs continue and are used to help preserve traditional lifestyles and cultural traditions (Doolittle, 2008). Serbia can be counted as one such country.
The connection between animals' and humans' music is not limited to one part of the world, one time or one society. However, the ways in which animal sounds are used in human music depends on the relationship with nature that a certain people choose to cultivate. One culture may have a particularly close contact with the natural world, whereas due to urbanisation another culture may be more dissociated from it (Doolittle, 2008). There is a difference in the system of philosophy between East and West. While Eastern philosophy (and religion) places music in the context of pantheism, where it is inseparably linked to and an interpretation of nature, Western philosophy argues that nature inspires the creation of music (Russell, 1972). For example, composers like Januequin or Messiaen are known for borrowing bird and other animal songs, while Bartok's night music (for example, Music for Strings, Percussion and Celesta, 1936) imitates the animals sounds of nocturnal birds and insects.

From the perspective of music and society, early humans would probably have codified their music as a system of social rules between the members of the community (Martinelli, 2001: 3). It is possible that some animals exhibit “early tribal” social traits that, although different from humans, are based on similar rules, rituals and structures (Martinelli, 2008: 7). As singing in primates evolved from loud calls used in a territorial or alarm context, it is reasonable to assume that the same may have applied to the evolution of human singing behaviour, and that loud calls of early humans were the base from which human singing and, ultimately, music evolved (O.R.Alonso, Music and Primates). Loud calls in humans and animals are believed to serve a variety of functions, including protection of territory, announcement of locality, food sources or danger (O.R.Alonso, “Music and Primates”). The function of music in early humans was perhaps to display and reinforce the unity of the group, a function that is still evident in modern humans (O.R.Alonso, “Music and Primates”).

It is tempting to assume that early human singing shared many characteristics with loud calls of modern monkeys (such as baboons and macaques) and especially apes, such as “loudness for long distance communication, pure tonal quality of notes, use of stereotyped phrases, use of biphasic notes, accelerating in note-rhythm and possibly a slow down near the end of the phrase, a locomotor display and a strong inherited component” (O.R.Alonso, “Music and Primates”). But, there are also several components of human music which are not found in loud calls of modern monkeys and apes: a steady rhythm (pulse, beat), reduction of inherited stereotype in favor of increased importance of learning phrases and sequence rules, and the option to invent new signal pattern (improvisation) and new conventions (repetition of improvised units) spontaneously (O.R.Alonso, “Music and Primates”). On the other hand, in 2006, Patel made careful measurements and video recordings of the elephants' performances. They found that an elephant could “play a large drum with a highly stable tempo”, a tempo more stable than most humans could achieve (Patel, 2006). In addition, animal sound patterns present clear, complete, articulated and universal music-like motifs, which are built on organised elements that have form, repetition, variation, intervals, 'scales', rhythm, tempo, variable timbre and dynamics (Martinelli, 2005: 6).
In animal 'cultures' much acoustic behaviour can be considered 'musical', and in humans music-like behaviour could have existed before the development of speech (K. Kosk, “Communication and Music”). In more than one instance, humans and animals share many musical traits and para-musical forms of behaviour: specific calls of vervet monkeys can sound like words, while male and female gibbons sing duets (Mithen, 2006: 107). Therefore, it is possible to assume that the mutual ancestors of humans and apes between 8 and 5 million years ago also had a similar repertoire of calls, and that these were the evolutionary precursor to modern human language and music (Mithen, 2006: 107). For example, gelada monkeys have different vocalizations featuring a great variety of rhythms and 'melodies', such as “fast, slow, staccato or glissando rhythms; first-beat accented or end-accented rhythms; melodies that have evenly spaced musical intervals covering a range of two or three octaves; melodies that repeat exactly, previously produced, rising or falling musical intervals – they performed much the same function as the rhythm and melody that it is found in human speech and singing” (Mithen, 2006: 110). The way geladas use rhythm and melody appears strongly analogous to its use in the early and non-linguistic stages of infant-directed speech (Richman, 1987: 203).

Language origins

Emotional communication through vocalisation is hypothesised to have been prevalent to the first communication systems of humans and animals (Jackendoff, 2006: 35). Similarities have been observed between pitch variations used by monkeys and by humans to express different emotions in different types of social contexts (Mithen, 2006: 111). In the 18th century, philosophers and linguists had different theories about the origins of language. For example, the so-called “bow-wow” theory held that language began when people imitated animal calls, while the “ouch” theory proposed that language began when people expressed pain or emotion (Ottenheimer, 2009: 230). “Ding-dong” theory suggested that language began when people noticed that certain objects had unique imitable sounds of their own, while “yo-he-ho” theory argued that language began when people started working together (Ottenheimer, 2009: 233). Twentieth-century anthropologists have also been preoccupied by the intriguing question of the origin of language, and agree on the fact that language has to be learned within a social groups (Ottenheimer, 2009: 237). Also advanced is the view that prehistoric and pre-language communication systems must have been made up of dozens of distinct vocal calls used in specific situations. By mixing two signals into one new one, the basic call system has been modified into a human language (Ottenheimer, 2009: 238).

We may speculate about the origin of human languages and whether it is specific to humans or has developed from animal communication. In theories of the mythical origin of human language, myths are considered as spontaneously produced universal mental images. Throughout history, humans have communicated with animals and have tried to understand animal communication. Man has used mystical language to communicate with animals or spirits, such as the language of birds. Humans naively believed that nature can speak, and an eternal human aspiration was to realize and master the animal language. For example, so-called inarticulate animal language is a
frequent motif in Serbian folklore: humans believed that by knowing animal language they would learn how to heal and predict the future (Cajkanovic, 1994: 436).

A language of signs is thought to have developed some two million years ago and fully articulated spoken language by 125,000 years ago (Ottenheimer, 2009: 259). Language can be defined as a kind of communication, and the sounds that animals make in almost all cases serve a communicative function: many animals communicate, but only humans appear to have language (Ottenheimer, 2009: 260). Nonhuman primates are unable to isolate and recombine units at one level into new units at a different level, and as a result, it appears that most animal communication is imitative (Ottenheimer, 2009: 241). In the next section, we investigate the hypothesis of mimesis as fundamental to the first human communication systems.

Mimesis as the first human communication system

Music possibly had its origin in mimesis, the imitation of natural sounds and in embodied rhythms (Heidegger, 2008: 152). If the realistic imitation of natural sound is an important part of primitive music, mimesis could have been a key means of early human communication (Mithen, 2006: 317). It is also possible that early humans engaged in various forms of mime to supplement other means of communication about the natural world. They may have imitated animals and birds as part of their communication system. Psychologists emphasise that “true” imitation requires not only imitating the body movements of another person or animal, but also understanding the intention behind those movements. This requires that the imitator “gets into the mind” of the person/animal being copied (Mithen, 2006: 317). However, early human mimesis didn’t necessarily involve imagining or believing that they were becoming the animals that they were imitating – it is perhaps more probable that mimesis was related to a mythological world in which people and animals could be transformed into one other (Mithen, 2006: 318). In this conception the mimes would have taken place as part of religious ceremonies in which the represented animals were ancestral beings rather than merely entities of the natural world. In its most simple form, mimesis may have been a communicative bridge between man and other apes (Mithen, 2006: 167).

With respect to totemistic music and its related concept of anthropomorphism, animals or natural sounds are endowed with human qualities. For example, in North-American Indian music, a man who represented a totemic animal could imitate the cry of that particular animal (Kumar, 2003: 100). When shamans enter trances they believe that they are transformed into entities with animal-like abilities, especially flight. We can refer to this as “mental” mimesis, while physical mimesis relates to animals movements. However, early human mimesis was likely to have been more prosaic in nature, i.e. concerned with physical imitation alone, as a means to communicate information about the natural world. Transformation into animals such as “what it is like to be” a lion, horse, eagle or bear was perhaps unlikely to have existed (Mithen, 2006: 167).
The universal phenomenon of dance can be detected everywhere, in humans and in animals (Martinelli, 2005: 4). According to many cultures, dancing often appears to be related to spiritual or supernatural issues (Martinelli, 2005: 4). The prime function of dance in this context is the transfiguration and identification of a person with other creatures of the visible and invisible world (Martinelli, 2005: 5). The identification with a totemic animal could be observed in the ancient Greek and Roman mime, early Chinese and Indian dance, as well as in the dances of Australian aborigines (Mithen, 2006: 168). Beside this, early human interactions mimicked animal sounds and movements. Mimicking and miming animals is still pervasive among many societies as part of their hunting practices and religious rituals. The Nyae Nuae community in the Kalahari desert mimic animal walks and movements, catching the rhythms closely. Many communal musical games also involve the imitation of animals: each anima is represented in the music by its own rhythmic pattern (Mithen, 2006: 169). However, Plato wrote about the absence of rhythm in animals, although their bodies are functionally similar to ours (C. Sachs, 1953: 38).

In antiquity it is likely that early music played a religious role and served as ritual. As music was used to communicate with supernatural beings, it became the principal means of communicating with the gods (who were thought to be shaped as animals or natural phenomena). This function of music appears to be a universal feature of all historically documented and present-day human societies (Mithen, 2006: 271). As well as mimicking animals’ movements, early humans could have imitated their calls, along with other sounds of natural world. Traditional peoples tend to make extensive use of onomatopoeia in their terms for living things (Mithen, 2006: 169). The onomatopoeia in early languages was possibly the most prevalent at the time of man’s greatest communicative relationship with nature. Onomatopoeic sounds are frequent in childhood, when people are going through early developmental stages (Golemovic, 2005: 228). We can assume that early human utterances contained onomatopoeia of natural and animal sounds, although, onomatopoeia may just have been a fraction of the vocabulary (E. Vajda, “The Origin of language”).

Since the beginning of human history, people have lived in close contact with animals. Naturally, humans have developed myths and legends about animals, giving them special meaning or extraordinary qualities. Helpful or harmful to humans, animals were sources and symbols representing the power of the natural world. Imitation of animal sounds can also serve practical functions such as luring animals during the hunt: hunters and shamans of many traditional cultures incorporate ritual imitations of animal sounds into their songs (Doolittle, 2008). In some cultures the music or songs relating to shamanistic practice have the intention to mimic natural sounds, sometimes with onomatopoeia (Hoppal, 2006: 143). Songs seek to connect with animals through magical, ritual or spiritual means. For example, the Mongolians perform a variety of rituals and songs after an animal is killed (Pegg, 2001: 247). Tuvans imitate crow in order to bring rain, their raven imitations are used to curse the enemy, while wolf or eagle owl imitations are used to frighten an enemy, or magpie imitation to uncover a lie (Levin, 2006: 126). For example, in Soyot’s shamanic songs we can hear sounds of birds and wolves which have been imitated to represent spirits of shaman. In this culture women imitate the sounds of a reindeer calf, accompanied by Nganasan shamans of Siberia as well as the sounds of polar bears.
The intention to mimic natural sounds is present in some Siberian cultures also. In many Serbian myths people talk with animals, turn into animals or fight with them. Serbs possess totem animals whose role was to guard a tribe, to predict the future or to cure illness (Cajkanovic, 1994: 240). Some of the animals, such as wolves, horses or bears, were very important. For example, some of the famous holidays in Serbian religion are named after animals: cattle, bear, mice, chicken, wolf, horse and fly (Cajkanovic, 1994: 246). During these holidays animals were treated with respect and different sacrifices were offered in their honour. Some old Serbian dances are named after animals; for example, mouse, rat, goat, snake, rabbit, duck, sparrow, titmouse, pig, horse and pigeon (Vasic, 2002:158).

In Serbian ethnographic literature wolves are mythical protectors of Serbs (Cajkanovic, 1994: 404). In its practice and beliefs, Serbian people identify with wolves. The wolf is an ancient Serbian, pre-Christian and tribal totem. It is not surprising therefore that a wolf procession exists in Serbian folk tradition: beside dressing as wolves, the procession leader starts singing, while the others have a repeated refrain (Vasic, 2004: 84). In this antiphonal song, melodies are constructed from three tones, while the phrase structure of these simplified dances is three-bars long. Old Serbian ritual songs were also constructed of three tones melodies, again with a three bars phrase structure. Wolves were totemic animals – they were not allowed to be killed, and if found dead they were given human burials (Cajkanovic, 1994: 68). The wolf, as a totemic and harmless, though wild animal, protected a tribe and had the ability to predict the future. The old Serbian supreme god was presented in the wolf's form, but later the god appeared as a horse (Cajkanovic, 1994: 171).

Music folklore – direct music parallels between humans and animals

Many communities combine music and movement with words, song and dance, share tales and poems, stories or metaphors, which relate to the natural world. These so-called 'archetypical artistic structures', some of which were universal and common to all communities, have been changed owing to migrations, trade and warfare (Ben-Amos, 1983: 11). Changes in facial anatomy, the evolution of Broca's area and changes in lifestyle, possibly occurred because of the need to differentiate the hominid call repertoire from that of the common ancestors to apes and humans. This might have happened between the time of the common ancestors some 6 to 2 million years ago (Mithen, 2006: 132). It is possible that their vocal and gestural utterances at this time remained holistic, in the sense of being complete messages rather than words to be combined (Mithen, 2006: 138). Those primordial and primitive artistic expressions of early man seem to be present in forms of folklore (Ben-Amos, 1983: 13) in that literary, visual and musical cultural heritage has been told and sung since antiquity. A basic assumption in folklore is that the archaic and primordial artistic forms that exist today are the same as they were when performed by our ancient predecessors (Ben-Amos, 1983: 14). In oral performance these artistic forms are verbally transmitted from generation to generation. The oral nature of folklore was
one of its crucial attributes, representing the primary expression of man (Ben-Amos, 1983: 17), and it is a well-known characteristic of Serbian folk tradition.

Communality is another important attribute of folklore, and it is prevalent in the language, social and historical experiences, religious systems and moral values of a society (Martinelli, 2008: 3). In addition, there exists the idea that folklore might be universal in form and in theme. One example is that, in the folklore of almost every community we can find imitation. Imitation is a basic practice for all musical activities, even it seems in non-human musical behaviour (Martinelli, 2008: 4). Imitation is very common among birds. As in most world folk music, in Serbian folk music, the principal of repetition, variation and improvisation is represented as specific structural patterns. Birdsong includes many of the processes of repetition that are so important to human music, such as refrains, symmetry and reprises – features which are also well represented in Serbian traditional music. Variation is also found in animal singing, and may follow rules similar to the rules in folk songs of oral traditions. A new song is created by adding phrases to an old melody, or by modifying old ones. In animal species repetition is more frequent than variation, so many bird species build rhythmical and metrical variations into their song patterns (Martinelli, 2005: 25).

Sung melodic improvisation is expressed through heterophony, which is perhaps the oldest type of singing in Serbian folk music, as well as a feature of numerous non-Western traditional musics (Golemovic, 2005: 62). This type of musical texture is characterized by the simultaneous variation of a single melodic line. Only the basic melody is realized at the same time in multiple voices, each singing the melody slightly differently. This type of singing, where parallel seconds can be heard for example, is reminiscent of wailing wolves. On the other hand, heterophony can be heard in the chirping of crickets. A pair of crickets can begin chirping antiphonally, which is common to some animals, birds and insects. One of the partners repeats the phrase by transposing it downward. If the first partner restarts its phrase, parallel seconds result: \[SE_1\].

Beside heterophony, another ancient type of traditional Serbian singing is a ‘bourdon’ – a drone bass. In the canidae family, which includes foxes, jackals, coyotes and the domestic dog, we can find a type of bourdon (Martinelli, 2005: 24). It is known from the literature that Serbs imitated dog's barking (Golemovic, 2005: 232). The bourdon singing style can also be recognized when wolves howl, where the first voice sings a melody, while the following voice other keeps the same tone (a bourdon): \[SE_2\]. This type of singing is perhaps most common in the mountainous Eastern Serbia. Is it really a coincidence that in this wolf-prone area, people mostly sing using the bourdon? We think it is not, and we must also point out that the specific howling of wolves can perhaps be heard in ancient Serbian folk songs, named “ojkanje” which contain a characteristic “cry” at the end of each phrase (Golemovic, 2005: 127): \[SE_3\].

In Serbian folklore there are examples of a wild dove addressing peasants in spring, advising them that it is soon time to start sowing. In the following example there is a syncopated rhythm, which is also a prominent figure in turtledove singing: \[SE_4\].
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On the other hand, syncopated rhythms also exist in the music of other cultures. Syncopated rhythm is also very common in Serbian folk songs and dances – for example, we can hear it in the song named “Sunce nam se krajom krade” (“The Sun is stealthily approaching”): SE 5.

As mentioned previously, turtledoves sometimes sing on the second scale degree, if one is listening within a tonal context: SE 6.

Would it just be coincidence that many Serbian folk songs end at the second scale degree? This type of a cadence is typical and we can recognize it in the folk song named “Bibilj poje” (“Nightingale sings”): SE 7.
Figure 4: The second scale degree cadence in a folk song

However, a turtledove creates several different rhythmic and metric patterns. A typical one is a triple metrical pattern with a dotted rhythm at the beginning of a motif:

\[
\begin{array}{c}
\frac{3}{4} \\
\end{array}
\]

Figure 5: Dotted rhythm in turtledove singing

After several repetitions of this regular, triple meter, a turtledove changes pattern from regular into irregular (5/8) and vice versa: SE 8. It is interesting to note that, just like a turtledove sometimes gently transforms its 3/4 pattern into 5/8 irregular meter, in some Serbian folk songs there are similar metrical change: SE 9.

Figure 6: Metrical change in a folk song “O, Mother, I haven't got an ornamental girdle”
The 5/8 meter is a typical dove pattern SE 10.

Figure 7: The 5/8 meter in turtledove singing

This rhythm is also the pattern in which many old Serbian folk songs are sung, such as “Ej gidi Stojne ubava” (“Hey, you beautiful Stojne”): SE 11.

Figure 8: The 5/8 meter in a folk song

In Serbian folklore there are several different notated sounds from nature, especially animal noises like a cuckoo or the cock-a-doodle-doo of a rooster. Roosters play an important role in Serbian mythology. Considered as the soul of the ancestors, sacrificed roosters were connected with the cult of the dead. Christmas customs also relate to roosters and their song determines what time it is at night (Cajkanovic, 1994: 287). A common and easily recognizable rhythmic pattern at the beginning of a rooster call is the following dotted rhythm: SE 12.

Figure 9: Dotted rhythm in rooster singing

As a very important totemic animal, it is likely that Serbs imitated rooster sound patterns in their original folk songs and dances. For example, in the old round dance named Vlasko kolo, the continuity of dotted rhythm is recognizable: SE 13.
Many Serbian folk tales feature cranes. These tales talk specifically about the shrill and loud sounds that cranes make. Distinctive in cranes' sound patterns, is the interval of the augmented fourth: SE 14.

The famous Istrian crane also makes this pattern, and the Istrian scale, with its augmented fourth, is widely used in Serbian folk music:

This interval is the ambitus of the downward tetrachord of the Balkan scale, where it can often be heard in Serbian folk songs and dances; for example, in the song named “Ti momo, ti devojko” (“Oh you, my beautiful girl”), see Figure 14, SE 15.
Sometimes, there is a regular change from 3/4 to 6/8, for example, in the Serbian folk song named “Devojce, devojce” “Little girl, little girl”: \textit{SE 16}.

This kind of metrical change can also be heard in the song of the cardinal bird: \textit{SE 17}.

On might ask, do humans imitate animals or vice versa, or can we speak about a common musical origin in humans and animals? Some birds use stable and precise sets of pitches in their signals, which are a feature of human music. Other birds build
“melodic motives” as elaborate as many human achievements (Mache, 2000: 477). Most animals show a tendency to perform within a limited interval area (Martinelli, 2005: 15). In Serbian music tradition a song's small melodic ambitus is very often presented as evidence of its antiquity (Golemovic, 1994: 138).

As with humans, African apes use a multi-modal communication system, employing gestures as well as vocalizations (Mithen, 2006: 120). It is interesting to point out that chimpanzees, the closest relatives of humans, perform a kind of “rain dance” because they dislike rain (Goodall, 1971: 54). In Serbian “dodole”, young girls masked with branches and leaves, perform typical ritual songs during dry summer seasons, this time calling for rain. This kind of ritual singing and dancing originates from pre-Christian times and is perhaps one of the oldest Slavic traditions. During this ritual, girls worshipped gods and prayed for rain. As already mentioned, Tuvans imitate a crow in the hope of bringing rain.

Another universal principal in dance is the circle figure, closed or open, in which dancers face a central object or direction of progression. This universal kinesthetic feature can be found in chimpanzees who perform a specific round dance. Old round ritual dances can be found all over the world. But we have to mention that “kolo” is a collective Serbian folk dance where groups of people hold each other around the waists, ideally in a circle. “Kolo” is normally performed at different social situations such as weddings, cultural or religious ceremonies. Although both men and women dance together, some dances require only men, while others are only for women. In the Serbian vocal music tradition, males and females do not sing together due to their different social positions. Hence, there are male-only or female-only songs. In addition, certain songs are only sung at specific social situations. Sometimes, it was forbidden for close relatives to sing together, as well as for a mother-in-law to sing with a daughter-in-law (Golemovic, 2005: 132). Plato also wrote that both sexes have melodies and rhythms which belong to them: those of women are clearly indicated by their ‘natural’ difference (C.Sachs, 1953: 51). In the animal world, for example in whales, only males appear to sing. But in all singing primates, males and females both sing, and in most singing primates, duet singing occurs (O.R.Alonso, *Music and Primates*). In the animal world, singing is determined by season: while some species sing only during the feeding season, in many bird species it can be noticed that most male birds sing to defend a territory and to attract a mate (Martinelli, 2005: 8). In 1871, Darwin wrote that musical tones and rhythms were used by our half-human ancestors, during the season of courtship (Mithen, 2006: 178).

Organization, coordination and cooperation can be noticed in both human and animal group dances (Martinelli, 2005: 5). For example, in a famous dance, the toneless round dance from the field of Glamoc (in Bosnia), people dance to the rhythm generated by the feet in a closed circle with hands joined and held forward at shoulders height. These are typical rhythmic patterns that dancers make.
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Figure 17: Rhythmic patterns in a folk dance

This kind of a music-less dance, without instrumental accompaniment, begins when the leader starts 'calling' the dance. The dancer can experience deep feelings throughout the dance, which begins with a slow tempo that gradually increases. It can be noticed that the rhythmic patterns that dancers create imitate a horse's gallop: SE 19.

Figure 18: Rhythmic pattern of the horse's gallop

As man and horse have had a close relationship for many thousands of years, it is possible that people imitated specific rhythmic patterns in their song. For example, Samoan people (from Samoa island in Pacific ocean) use mats as percussion instrument in order to imitate trotting horses: the first tone struck with both sticks, while the second with only one (C. Sachs, 1953: 45). It is also widely known that cranes perform specific courtship ceremonies, which include several male bows. On the other hand, in some Serbian folk dances a bow presents a typical choreographic pattern.

Conclusion

The basic ideas underpinning this essay are that: 1) singing and dancing are amongst the oldest forms of artistic expression and one of the most ancient and universal modes of human communication; 2) the first human ritual songs and dances originally had emotional, social and cultural functions; 3) social rules also dominate the animal communicative system; 4) humans and animals used to live in close (communal) proximity; and totemism and the Serbian animal cult are a trace of early humans (famous Serbian folk dances are named after animals, for example).

Since antiquity, humans have imitated sounds from their environment, especially those of animals. As a result, human language may have developed from the imitation of animal sounds (E. Vajda, “The Origin of Language”). Applying the same
hypothesis to the origin of music, we assume that in Serbian ritual songs and dances, animal sound patterns were incorporated for ritual purposes, most frequently by direct imitation. The sound examples presented in the article appear to show a clear relationship between the communication systems used by humans and animals. In nature-oriented nations, among which we include Serbia, this long-standing relationship has survived to this day and can be noticed in Serbian folk music. For example, small melodic ranges are typical of many animal species, and their incorporation into Serbian ritual songs suggests that they are indeed very ancient. Drones, heterophony and antiphonal singing are also recognizable in old Serbian folk songs, which can also be heard in wolves' howling. Galloping rhythms can be heard in numerous Serbian folk songs, while ending on the second scale degree is characteristic for most Serbian folk songs and is also found in a turtledove singing. In many Serbian folk songs and dances regular and irregular meters are interchanged, which is a characteristic of the turtledove song. The interval of augmented fourth, which occurs in Istrian and Balkan scales, parallels the sung intervals of a crane. Finally, dotted rhythms, recognizable in rooster singing, represent typical rhythmic patterns found in many Serbian folk songs and dances.

References


1 All sound examples (SE1-19) can be accessed through online version of the article at web site of JIMS: www.musicstudies.org

Biographies

Milena Petrovic is a musicologist and music educator, and is an assistant professor at the Faculty of Music, University of Belgrade. Milena holds MA and PhD degrees from the University of Belgrade, as well as a specialization in Musical Theatre from the University of Arts, Belgrade. Her main interests are music perception and cognition, music-linguistic and zoo-musicology.

Nenad Ljubinkovic graduated from the Filology school, Belgrade University, literary department, where he took MA and PhD degrees. He worked at the Institute of Literature, has lectured on national literature at different schools in Serbia, and is now an emeritus professor at the University. He was a founder and a leader of the project named 'Serbian Oral Tradition in Balkan Context' at the Institute of Literature. During 2004/05, he was a leader of the international research project named 'Oral Tradition of Serbian Ethnic Songs', under the sponsorship of UNESCO. Nenad Ljubinkovic is the author of the large number of papers and a reviewer of Yugoslav people's literature.