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Local Bird Knowledge and Practices among Traditional *Accipiter* Hawkers of the Black Sea Coast of Transcaucasia

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Abstract The traditional accipiter hawkers in the Arhavi district of Artvin province of Turkey and the Makhindjauri (მახინჯაური) village of Georgia were investigated to understand local knowledge and potential conservation of birds in these communities. Through free-listing, identification, pile sorting, and conducting unstructured interviews, our results revealed detailed, consistent, and specific knowledge of birds among the hawkers of both survey sites. All participants were male, as both hunting and hawking are gendered ancestral activities. Songbirds and diurnal raptors were the most common groups identified. The classification of birds was primarily functional, citing behavior and usage, especially edibility. The names of songbirds are more likely to be of non–Turkic origin, probably because of onomatopoeia, but most raptors have very functional Turkish names. We have concluded that this detailed, and consistent knowledge within the region could form a good foundation for effective and participatory conservation strategies in communication with the local hawkers.

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Introduction

The aim of this study is to show the ethno-ornithological content of traditional accipiter hawking in the Black Sea/Transcaucasia region of Turkey (Figure 1). It is typical for hunters in the large steppes of Central Asia to hunt with the golden eagle (*Aquila chrysaetos*) and for the desert people of the Arabian Peninsula to hunt with *Falco* species. In the Transcaucasia and Black Sea coasts, falconry is often done with *Accipiter* species. In the region of our study, hawking is pursued with the Eurasian sparrowhawk (*Accipiter nisus*), which is very suitable for hunting fleshy, small-sized prey such as the common quail (*Coturnix coturnix*) (Figure 2). The common quail is caught by the female Eurasian sparrowhawk. The sparrowhawk is caught by using the female red-backed shrike (*Lanius collurio*) in September, and the red-backed shrike is caught by using the mole cricket (*Gryllotalpa vulgaris*) in August. The mole cricket is caught in July by pouring soapy water inside their holes. Experiences over generations determine what to use as a decoy and these experiences are consistent with ecological principles.

There are studies on the deleterious impacts of such traditional bird-related cultural activities (Mian 1986; Wyatt 2014), but their positive effects have not yet been adequately analyzed. Technical details of traditional trapping as an ethnoecological phenomenon are very well documented (Magnin 1988). The aim of this study is to define the knowledge and

Figure 1 *Arhavi* and *Makhindjauri* (*მახინჯაური*) are located on both sides of the border in the Black Sea/Transcausia region of Eastern Europe/West Asia.

perception of bird fauna by the local people of the Transcaucasia/Black Sea region particularly amongst traditional accipiter hawkers. We believe this information can inform future conservation efforts.

Study Locations

Arhavi, a district of Artvin province of Turkey, located 27.5 km south of the Georgian border is interesting in terms of the functional relationship of the people of the region with its birds (Figure 1). The most typical type of relationship is traditional accipiter hawking. In Arhavi, all hawkers come from agrarian communities. Tea and hazelnuts are commonly grown in gardens for non-commercial consumption, and plantations are also typical common quail hunting fields. Makhindjauri (მახინჯაური) is 48.7 km north of Arhavi in Georgia, and 21.5 km from the Turkish border (Figure 1). It is a very important location both for bird migration and traditional accipiter hawking (Van Maanen et al. 2001). Old tea plantations are commonly used for hawking and hunting here, particularly for quail. According to our nonstructured interviews, both in Georgia and Turkey, hawkers go to the trapping fields on a clear day after a rain because of an abundance of prey in these conditions (Van Maanen et al. 2001). In both towns, urbanization is increasing due to economic development and will likely have an impact on these traditions.

In Arhavi, the national culture is Turkish, and the primary religion is Islam. In Makhindjauri (მახინჯაური), the national culture is Georgian, and the primary religion is Christianity. The local culture and ethnic group of both towns, however, is Laz. Laz is an unwritten, Kartvelian (South Caucasian) language (Lacroix 2009) that is increasingly endangered (Harrison 2023, Ünlü and Hewitt 2023). Laz people live primarily in the southeastern shores of the Black Sea today (Minorsky 2010) but are more common in Turkey (Kikvidze and Pachulia 2020). As a primarily oral language, intense interaction with the Turkish language has contributed to its diversity and dynamism (Harrison 2023). A Lazuri proverb "happiness is achieved by having a good horse, dog and hawk" illustrates their passion for hunting with birds (Bıjışkyan 1969).

Hawking is a very strong tradition in both towns and observations from both locations contribute to an

Figure 2 Hunting Chain: 1. common quail (*Coturnix coturnix*) 2. Eurasian sparrowhawk (*Accipiter nisus*) 3. red-backed shrike (*Lanius collurio*) 4. mole cricket (*Gryllotalpa vulgaris*).

understanding of this practice from a regional perspective. Transcaucasia represents the region between the breeding and wintering grounds of migratory birds; their migration stream continues along the Choroki River Valley and the Black Sea coast in northeastern Turkey (Van Maanen et al. 2001). Birds that cannot enter the Black Sea Mountains of Turkey via the Choroki River follow the coast. There are important valleys extending into the interior. The valley in Arhavi is the second valley after the Hopa district used by migratory raptors (Magnin 1988; Magnin and Kurdoglu 2016). Makhindjauri is also one of the migration points of quail and provides secure resting places after crossing the Black Sea.

Methods

Participants

Arhavi and Makhindjauri (მახინჯაური) are important sites in the Western Palearctic zoogeographical region not only for sparrowhawk migration but also for other raptor species. All the interviews on both sites were conducted during the autumn migration season, which is also the sparrowhawk season, and it is when all activities related to accipiter hawking take place. There was a total of three visits for this study. The first was to Makhindjauri (მახინჯაური) and then two in Arhavi. While everyone in both towns has some knowledge about birds and hawks, hunting and hawking are traditional and gender specific activities (Bonta 2003). As such, all the participants were adult males. The general occupations of traditional hawkers are related to natural resources, such as hunting, non-commercial angling, and trapping songbirds as pets to be kept in cages for their singing. Although we used different methods in the two areas, they complemented each other because of the close distance and similarities of the culture and environment.

In Makhindjauri (მახინჯაური), all participants were hunters and traditional accipiter hawkers, and about 50 of them were interviewed and observed during the single visit. Here, we conducted non-structured interviews with hawkers and the hawkers were observed during raptor counts. Bird watchers and ornithologists from all over the world conduct raptor counts regularly every year, especially during the fall migration.

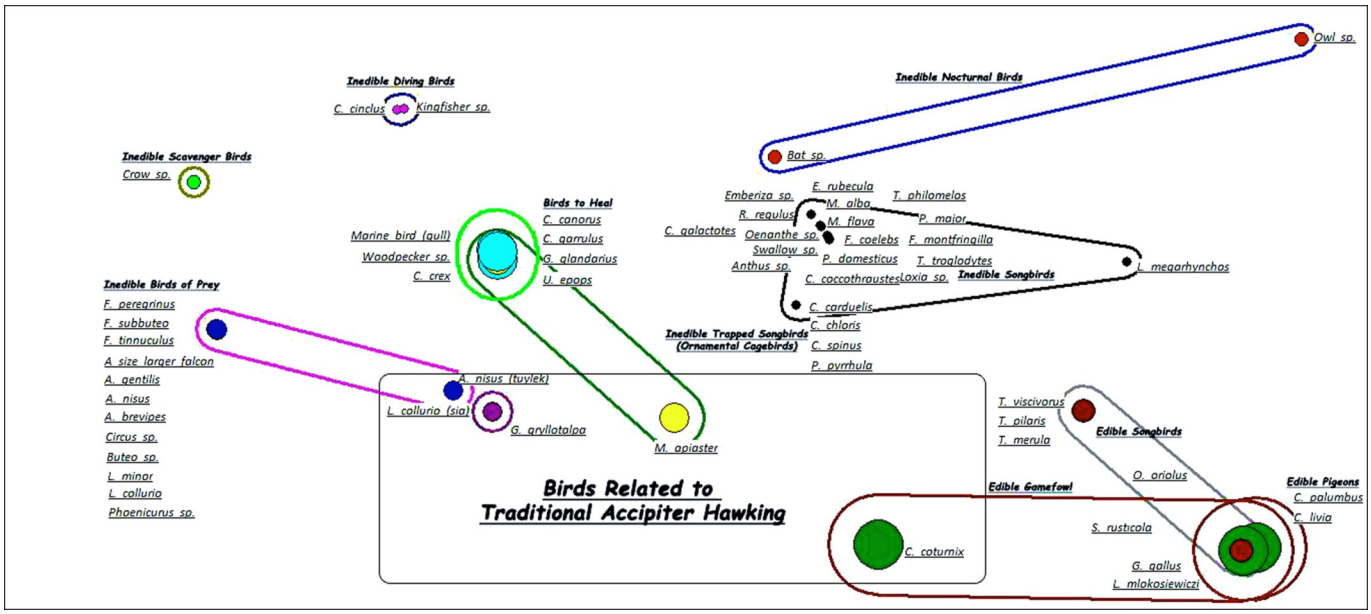

Figure 3 Non-metric multidimensional scaling with data from pile sorts of birds.

In Arhavi, the participants were hawkers and other relevant people such as their families. Seven groups of 20 people were interviewed during two visits here. These groups of people were from one flower shop, three barber shops, and three coffee shops, whose owners and customers are hawkers. Several of these shops had red-backed shrikes that were used in hawking on the front perches. It is an honor for shop owners to display both hawks and shrikes in front of the shop until they release them. This practice helped us to identify some of the accipiter hawkers to interview.

Free-listing, Identification Exercises, and Pile Sorts

During the second visit to Ahravi, identification exercises and pile sorts were carried out based on the results of free-listing exercises under the guidance of an experienced local hawker (Table 1). A bird guide in English with pictures was used to avoid manipulating the informants with the official Turkish names of the birds and people were more willing to talk by using visual material (Bignante 2010). While conducting the identification exercises, we asked respondents "What kind of bird is this?" to understand the local classification. Then, we coded and applied the results as pile sorts of data to enter and to analyze on a multidimensional scale (Table 1, Figure 3). The software program ANTHROPAC 4.95 (Borgatti 1995) was used to analyze free-listing and to calculate saliency and pile sort data (Figure 3).

The naming strategy for the bird species follows worldbirdnames.org (Gill et al. 2024). Most of the names in Arhavi are Laz, but some of them are quite pure Turkish referencing the bird's behavior and usage, especially diurnal birds of prey. For example, *atmaca*, means 'throwing' and is related to their hawking style. Some of the local bird names also include local dialects of other languages, however. For this reason, we classified all names as Turkic or non-Turkic (Table 1, Figure 4).

Results

Saliency

In the free-listing exercises, 105 names from 14 orders and 58 bird species were elicited (Table 1). Freelists can give us saliency of items, which reflects the relative importance of birds (Newing et al. 2011). The most prominent bird species associated with hawking were Passeriformes and Accipitriformes, respectively (Table 1, Figures 4 and 5). Although we anticipated strong recognition of birds of prey, the level of traditional knowledge (total salience and total species) was higher in Passeriformes than in raptors. The reasons for this could be the high number of species and broad number of traditional groups of birds included in the survey. Songbirds are included in almost all traditional groups by participants, even raptors (such as shrikes) (Table 1).

Free-listing also elicited intra-species details, such as *mamul* for males, and the inclusion of non-avian

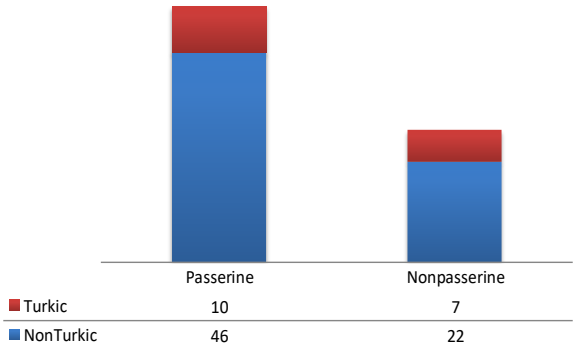

Figure 4 The number of mentioned local bird names: passerine, non-passerine, Turkic, non–Turkic.

species such as *vapa*, the mole cricket, and bats. *Mamul* in Laz is used for the two primary hunting species: the red-backed shrike and the Eurasian sparrowhawk. The mole cricket was mentioned for its association with hawking, employed as a decoy, and bats were mentioned as "nocturnal birds" (Figure 2).

Identification and Naming

There is a rich diversity of bird names in Ahravi, where we recorded 85 local bird names (Table 1, Figure 4). Thirty-four of the names listed are Turkish, such as *atmaca* and *karakush*. Seventy-one of the names are non-Turkic. According to the participants in Arhavi, non-Turkic local names are Lazian. However, at least some of these non-Turkic names likely belong to the other minority languages and dialects due to the diverse and complex distribution of languages in the region. There is also clear influence of Greek names as well as names deriving from the sounds of the birds themselves.

Particularly interesting is the fact that there are more non-Turkic names for songbirds while birds of prey have very pure Turkish local names (Figure 4). The use of onomatopoeia may be the reason why songbirds have more non-Turkic names (Berlin and O'Neill 1981). For example, *Parus major* (great tit) has the name *mshkii*, a mimic of the species' song. It sounds like "teacher" rhythmically. These older, non-Turkic names have not been converted into Turkish due to the reflection of the birds' voices, especially inedible songbirds (5, 7) (Table 1). The wide knowledge of songbirds seems much like the diverse plant knowledge of beekeepers (Cheng et al. 2020).

Some of the names of passerine birds in Turkey are pure Greek, such as, European greenfinch (*Chloris chloris*), which are mostly kept as cage birds for their song (Table 1). The common Turkish name of this species is *florya* and modern Greek name is Φλώρος (Flóros) (The Hellenic Ornithological Society). In Arhavi they use a non-Turkic local name, *civane*, again reflective of its song.

The Turkish bird name *seyfi*, a small raptor (Özdemir 2012), is likely to be associated with the Lazian name *sifteri* of the Eurasian sparrowhawk (*A. nisus)*, which is known in the region but not used in Arhavi, a Lazian town (Bijişkyan 1969). Here, the term from a proverb, *atmaca*, is used for the Eurasian sparrowhawk and the birds are still in use. The Lazian name *mamuliki* is also used but only for the male hawks, and they are not used for hawking.

Even pure Turkish names have very complicated interactions. Traditionally, "*doghan*" describes medium -large sized soaring birds of prey. During identification exercises, *Buteo* hawks are identified as "*doghan*" with 100% agreement (Table 1). *Doghan* means "rising" in Turkish. Traditionally, the largest raptors are called by the Turkish name, *Kartal*. These include vultures, the golden eagle (*Aquila chrysaetos*) and white-tailed eagle (*Haliaeetus albicilla*), but formally they designate only eagles. This traditional definition is consistent with the ancient Greek name for large birds of prey, *aëtos* or *aietos* (Arnott 2007). Also, in modern Greek, eagle is αετός (aetós), golden eagle (*Aquila chrysaetos*) is Χρυσαετός (Chrys aetós), and white-tailed eagle (*Haliaeetus albicilla*) is Θαλασσαετός (Thalassaetós) (The Hellenic Ornithological Society). In ancient Greece and many ancient cultures of Anatolia, the eagle was the symbol of light, the sun, as well as the solar god, Zeus, kingship, and sovereignty, an opposite of the snake (Arnott 2007; Hull and Fergus 2009; Johansson 2012; Wittkower 1939) and is likely related with *doghan* in Turkish. Many of the common Georgian names and local names in Arhavi are not the same but Levant sparrowhawks *(Accipiter brevipes*) are called *karagöz* in Arhavi, meaning black eye, and it has the same meaning in Georgian (Van Maanen et al. 2001), so the approaches are similar.

Apart from the white-throated dipper (*Cinclus cinclus*) and kingfisher (*Alcedinidae* sp.), none of the wetland birds such as ducks and herons were mentioned in the free-listing results. This is a result of the interaction between the local people and the environment they inhabit, which is primarily woody and mountainous, despite its proximity to the coast.

Secretive, silent, and alpine birds remain largely

Table 1 Bird species identified in study. Local names and origin (Turkic/Nonturkic). Salience by species and local name. The birds that do not have salience on the table were only mentioned during identification exercises. Groups identified in sorting: 1 Falconry, 2 Raptor, 3 Game, 4 Edible, 5 Inedible, 6 To heal/Medicinal, 7 Song, 8 Nocturnal, 9 Trap, 10 Scavenger, 11 Diver.

Sp. Name	Sp. Salience	Local name	Turkic/Non-Turkic	Salience	Included group
Fringilla coelebs	0.742	*kinchkaki*	NT	0.402	5, 7
		ispinoz	NT	0.244	
		ispinozlar	T	0.095	
Carduelis chloris	0.532	*purmoli*	NT	0.154	5, 7, 9
		florya	NT	0.317	
		civane	NT	0.147	
Accipiter nisus	0.496	*atmaca*	T	0.413	2, 5
		mamuliki	NT	0.202	
		tüylek	T	0.103	1, 2, 5, 9
Lanius collurio	0.483	*gacho*	NT	0.483	2,5
		mamulgacho	NT	0.139	
		sia	NT	0.135	1, 2, 5, 9
Falco tinnuculus	0.445	*kerkenez*	T	0.235	2, 5
		anke	NT	0.21	
		pipiliki	NT	0.049	
Passer domesticus	0.441	*serche*	T	0.226	5, 7
		bughdaykushu	T	0.112	
		sokak serchesi	T	0.103	
Turdus merula	0.413	*zesku*	NT	0.268	3, 4, 7, 9
		karatavuk	T	0.253	
		karakush	T	0.02	
Carduelis carduelis	0.407	*saka*	T	0.285	5, 7, 9
		cennetkushu	T	0.122	
		kikilimchita	NT	0.058	
Buteo sp.	0.39	*doghan*	T		2,5
Parus major	0.389	*mshkii*	NT	0.278	5, 7
		bashtankara	T	0.111	
Accipiter brevipes	0.368	*karagoz*	T	0.344	2,5
		merlin	NT	0.024	
Fringilla montfringilla	0.358	*golakinchkakhi*	NT	0.266	5, 7
		gola kushu	NT	0.092	
Merops apiaster	0.354	*mapatule*	NT		3, 5
Upopa epops	0.343	*golamamuli*	NT	0.227	5, 6
		ibibik kushu	T	0.066	
		golamamuliurculi	NT	0.049	
Oenanthe sp.	0.321	*ovakushu*	T	0.135	5, 7
		famsil	NT	0.131	
		kvamcil	NT	0.054	
Spinus spinus	0.317	*cighili*	NT	0.238	5, 7, 9
		iskete	T	0.048	
		cillizi	NT	0.032	

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Sp. Name	Sp. Salience	Local name	Turkic/Non-Turkic	Salience	Included group
Coturnix coturnix	0.314	*otruge*	NT	0.301	1, 3, 4, 6, 9
		ghargha (male)	NT	0.063	
		bildircin	T	0.02	
Troglodytes troglodytes	0.273	*churcha*	NT	0.266	5, 7
		churchasica	NT	0.088	
		makrumpe	NT	0.008	
Oriolus oriolus	0.258	*malaghue*	NT	0.253	3, 4
		asmali	T	0.046	
Glandarius glandarius	0.232	*chiki*	NT	0.156	5, 6
		chihi	NT	0.076	
Scolopax rusticola	0.205	*kaskhotume*	NT		3, 4
A larger size falcon	0.204	*shahin*	T		2, 5
Columba livia	0.198	*toroci*	NT	0.142	3, 4
		yabani guvercin	T	0.056	
Pyrrhula pyrrhula	0.193	*fifi*	NT	0.098	5, 7, 9
		shakrak	T	0.051	
		fiyo	NT	0.028	
		erikchi	T	0.016	
Accipiter gentilis	0.178	*atmaca shahini*	T		2, 5
Luscinia megarhynchos	0.178	*maincia*	NT	0.178	5, 7
		maune	NT	0.116	
Circus sp.	0.146	*kudelikche*	NT	0.115	2, 5
		mundikvali	NT	0.031	
Turdus philomelos	0.144	*suida*	NT	0.251	5, 7
		macacga	NT	0.054	
Erithacus rubecula	0.143	*sana*	NT		5, 7
Cuculus canorus	0.141	*kuku*	NT		5, 6
Loxia sp.	0.139	*makasgaga*	T	0.082	5, 7
		kikilgolaktei	NT	0.057	
Cinclus cinclus	0.136	*tkamzesku*	NT		5, 11
Regulus regulus	0.134	*chalikushu*	T		5, 7
Cercotrichas galactotes	0.125	*chalibulbulu*	T		5, 7
Anthus sp.	0.107	*liashatu*	NT	0.099	5, 7
		tipisknci	NT	0.085	
		otkusu	T	0.008	
Motacilla alba	0.105	*tintan*	NT	0.105	5, 7
Emberiza sp.	0.097	*yabani kanarya*	T		5, 7
Crex crex	0.093	*gharga*	NT		5
Gallus gallus	0.087	*khotume*	NT		4
Turdus pilaris	0.085	*cokali*	NT		3, 4, 7, 9
Falco peregrinus	0.083	*anke shahini*	T		2, 5
Turdus viscivorus	0.08	*chimchikide*	NT	0.08	3, 4, 7, 9
		chimchikine	NT	0.027	
Corvus sp.	0.071	*kvai*	NT	0.,071	5, 10

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Sp. Name	Sp. Salience	Local name	Turkic/Non-Turkic	Salience	Included group
Lyrurus mlokosiewiczi	0.07	*khotume*	NT	0.04	3, 4
		yaban_tavughu	T	0.03	
Gryllotalpa gryllotalpa	0.068	*vapa*	NT		1, 5, 9
Columba palumbus	0.053	*alakanat guvercin*	T		3, 4
Woodpecker sp.	0.034	*mkudi*	NT		5
Swallow sp.	0.031	*chkirdane*	NT		5, 7
Bat sp.	0.027	*burbu*	NT		5, 8
Coccothraustes coccothraustes	0.022	*ahkushpulmol*	NT	0.015	5, 7
		chakushpulmol	NT	0.01	
		chuspulmol	NT	0.007	
		kocabash	T	0.005	
Owl sp.	0.021	*ghum*	NT		5, 8
Kıngfisher sp.	0.02	*tamzesku*	NT		11
Motacilla flava	0.016	*cintani*	NT		5, 7
Larus sp.	0.014	*zuvaginci*	NT		5
Lanius minor	0.01	*shachuli*	NT		2, 5
Phoenicurus sp.	0.009	*kutelimchita*	NT	0.04	2, 5
		krana	NT	0.009	
Coracias garrulus	0.004	*golamchiki*	NT		6
Falco subbuteo		*pipilik shahini*	T		2, 5

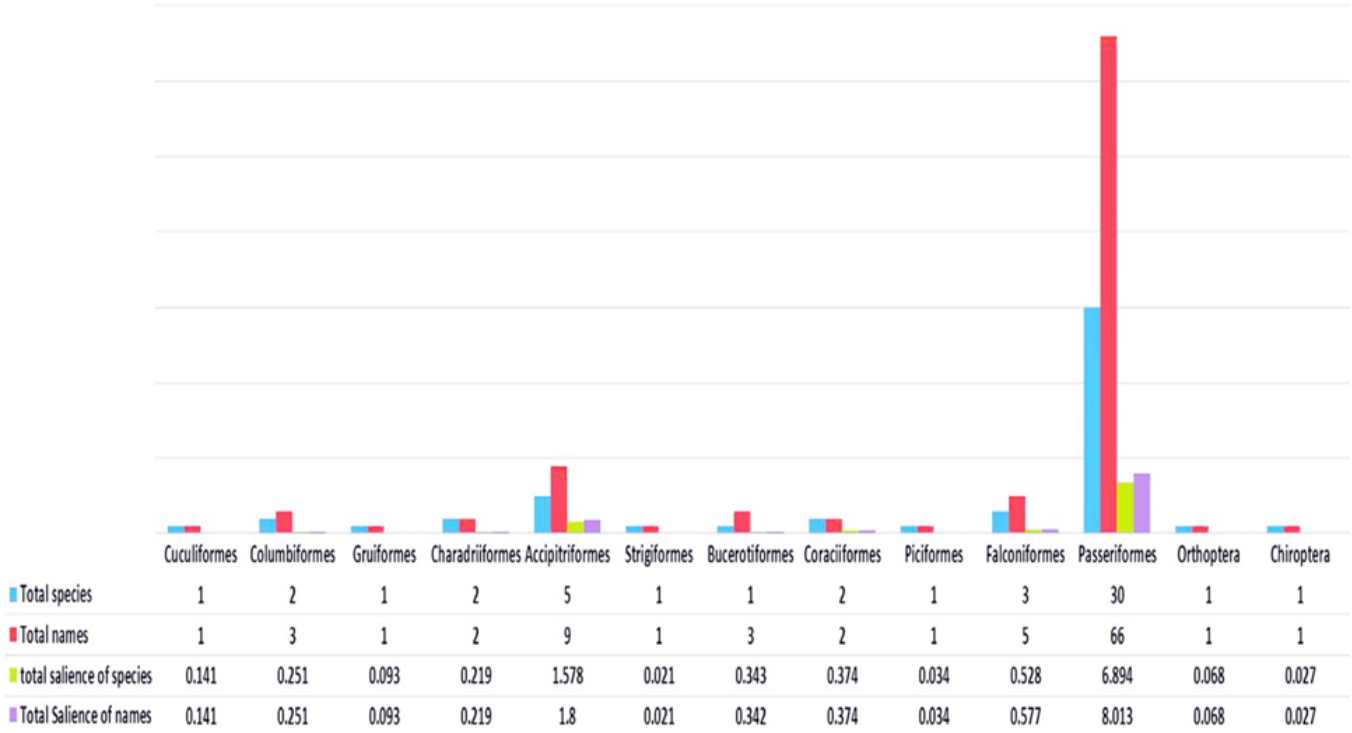
unknown. The lack of interaction is reflected in the paucity of local names. This is mostly true for some alpine species such as the Caspian snowcock (*Tetreagallus caspius*). Even elegant species such as the common rosefinch (*Carpodacus erythrinus*) are not well known and do not have local names (Ploeg and Weerd 2010).

Classification and Uses

Analysis of pile sorts that were clustered according to participants' answers were grouped as falconry, raptor, game, edible, inedible, to heal/medicinal, song, nocturnal, trap, scavenger, and diver (Table 1, Figure 3). The local classification is always according to use. For example, the results of the pile sorts confirm that all clusters of shrikes, raptors (*gacho* and *shachuli*), and Eurasian golden oriole (*Oriolus oriolus*), were never classified as songbirds, but instead were classified as game.

Functional similarities perceived among the species of pile sorts occur. There was strong consistency among the participating groups in Arhavi, probably due to strong communication between the public and hawkers in the small towns. There was almost 100% agreement in the identification exercises and pile sorts across almost all species. An exception was for the identification of the *Turdus* species likely due to similarity in appearance and use. Each *Turdus* species has its own special local name, and all species are eaten (Table 1). Massive, fat songbirds such as *Turdus* species and starlings are more likely to be considered edible with the targeted hunted species being common quail (Figure 3).

Cultural diversity results in different approaches to birds (Muiruri and Maundu 2012). At the two sites, the main difference between birds of prey is their edibility. In Georgia, the most typical edible raptors are European honey buzzards (*Pernis apivorus*), which are made into soup, harriers (*Circus sp.*), which are roasted, and eagles (*Aquila sp.*), which are grilled. In Georgia, smaller birds are also killed to feed sparrowhawks and shrikes. In the Black Sea region of Turkey, birds of prey are not hunted or eaten, mostly due to Muslim religious influence; however, they may have been chosen as a source of meat for species such as decoy shrikes and sparrowhawks (Magnin and Kurdoglu 2016). Inedible birds are not only carnivorous ones, all birds of prey are believed to be scavengers, but as mentioned above, carnivorous



	Cuculiformes	Columbiformes	Gruiformes	Charadriiformes	Accipitriformes	Strigiformes	Bucerotiformes	Coraciiformes	Piciformes	Falconiformes	Passeriformes	Orthoptera	Chiroptera
Total species	1	2	1	2	5	1	1	2	1	3	30	1	1
Total names	1	3	1	2	9	1	3	2	1	5	66	1	1
total salience of species	0.141	0.251	0.093	0.219	1.578	0.021	0.343	0.374	0.034	0.528	6.894	0.068	0.027
Total Salience of names	0.141	0.251	0.093	0.219	1.8	0.021	0.342	0.374	0.034	0.577	8.013	0.068	0.027

Figure 5 Number and salience of bird names as they relate to 14 orders and 58 species of birds in the study area.

Turdus species are labelled as edible (Table 1). In our interviews, only one participant from one of the groups stated that the bullfinch was edible, probably due to its size. It seems that diversity of edible birds was wider in the past in both site areas; diversity is currently wider in Georgia, which may represent persistence of earlier traditions.

Today, very small songbirds and birds thought to be scavengers are not considered edible in Arhavi. Corn crake (*Crex crex*) is called *gharga* and they do not hunt it, and male common quail is also called by the same local name. Sometimes woodcocks are hunted by hawkers, which is why they have a specific name as prey. *Mapatule* (European bee-eater, *Merops apiaster*) is shot for two reasons: to protect beehives and to provide food for tended female hawks.

In the past, *Cardueline* finches and house sparrows (*Passer domesticus*) were used as a decoy instead of red-backed shrikes during spring migration in Arhavi (Magnin 1988). The observations made in Makhindjauri (მახინჯაური) showed that house sparrows were still used as a decoy there.

Atypical individuals of shrikes and sparrowhawks, such as white ones, attract interest in both regions (Van Maanen et al. 2001). Interesting-looking species with a crest or tuft, such as Eurasian jay (*Garrulus glandarius*) and Eurasian hoopoe (*Upupa epops*), are believed to have medicinal properties and their local names include *gola*, which means "hill" in Laz. Although they are hunted, these birds are not classified as game or edible, instead they are classified as inedible due to their ability to heal (Table 1).

Discussion

In Arhavi, people mostly learn hawking from other members of the family beginning in childhood. This activity is associated with spare time rather than the degree of wealth. Hawkers are mostly local tradesmen and their customers. Every hawker has other hawkers in their family. With the migration from rural to urban areas due to unemployment, traditional accipiter hawking has decreased in Arhavi. It persists on a limited basis in western cities, especially Istanbul.

According to our non-structured interviews, over time the economic cost of traditional accipiter hawking, including equipment, has increased tremendously. As a result, there is a decrease in this traditional practice. The increasing environmental awareness of hawkers through the media also has an

impact. Salted common quail meat is consumed in Georgia (Van Maanen et al. 2001), but it is gradually decreasing as food source in Arhavi because of the decrease in hawking. For the sustainability of local foods, this traditional dish could be prepared using common quails raised in captivity, but quail breeding is not common. In recent years, hawkers have not gone to the field to hunt common quails. They just keep the hawk as a pet for one year or just catch and release them. The scarcity of common quail and other prey has also affected the practice of hawking. There is still an abundance of sparrowhawks, but they are becoming more monotypical without many varieties in their colors compared to the past, according to our respondents.

Secretive, silent, and alpine birds remain largely unknown. The lack of interaction is reflected in the lack of local names. This is mostly true for some alpine species such as the Caspian snowcock. Even elegant species such as the common rosefinch are not well known among locals and do not have local names (Ploeg and Weerd 2010), although these species are very abundant and very well known among the birdwatchers and ornithologists in the region. Overall, understanding bird knowledge and naming by hawkers can also contribute to understanding the origin of bird names in Turkey (Table 1).

In the region, new bird migration hotspots can be discovered by checking the hiding points for catching the Eurasian sparrowhawk. Especially around Batumi, migratory raptor counting points are always used by traditional accipiter hawkers and these points have been known for many years. Among traditional *Accipiter* hawkers, Eurasian sparrowhawks are classified not only by their color but also by their behavior, including preying style. As mentioned by participants *Tüylek*, means adult-plumaged, female sparrowhawk. *Tüylek* birds also have different types as *Kızıl Tüylek* and *Sarı Tüylek* and they claim these birds have different preying styles. This traditional hawking knowledge contains a very important migration data that should be investigated further by ornithologists.

Conclusion

There is a close relationship between the conservation value of bird species and cultural values (Alcántara-Salinas et al. 2022). Ethno-ornithological studies can improve the effectiveness of conservation and advance scientific knowledge (Berkes 1999). Conservation actions should not be isolated from the local people (Muiruri and Maundu 2012). The general occupations of traditional hawkers are related to local use of natural resources, such as hunting, non-commercial angling, and trapping songbirds for pets kept in cages for their singing. There is no trade of sparrowhawks amongst traditional hawkers, but decoys and equipment are exchanged. This is possibly an advantage for conservation efforts (Alves et al. 2013). There is, however, an illegal trade in hawk species to Middle Eastern countries, and more research is needed into how this affects falcon populations and other wildlife. Determining the impact of hawking is not easy due to the complexity of other anthropogenic factors such as habitat loss (Pangau-Adam and Noske 2010).

This study of hawkers helps us to better understand cultural values and recognizes the potential of better environmental awareness in the local communities, including relatively detailed, precise, and consistent bird knowledge. The consistency of information concerning birds can provide an important basis for communication with modern stakeholders such as researchers and NGOs.

This study reveals the potential roles that hawkers could play in conservation studies and management. Detailed bird knowledge forms the basis for awareness. Hawkers randomly catch an average of 4–5 ringed hawks a year and release them because they are afraid of reporting the ringed ones and fear being captured as poachers. The raptors released by traditional accipiter hawkers need to be surveyed by ornithologists and ringed by bird ringers, as an invaluable source of data. They also can catch hawks fitted with a transmitter. Attempts are being made to persuade them to obtain such data in order to have better ornithological records. Bird trapping techniques should be observed by scientists using nets and decoys.

Birdwatching is not suitable for them because they find it somewhat passive due to the distance between the observer and the bird, the lack of tactile contact, or use of any tools. But volunteering for activities such as bird banding, photography, and bird rehabilitation allows them to be closer to the birds. Additionally, the use of tools for these activities makes them more attractive to trappers and hunters, as well as allowing hawkers to help protect the birds because they are more sensitive than regular hunters. Their actions are not focused on killing the birds; they are very emotionally connected to their hawks, shrikes, and even mole crickets. Nevertheless,

birdwatching, and environmental education should still be encouraged, especially among the trappers' children. Children's interest in accipiter hawking has decreased as they integrate into urban life and through the influence of education and unemployment. We suggest that the traditional accipiter hawking, which was a survival adaptation in the past and has turned into a passionate hobby today, can evolve into a factor that triggers interest in nature conservation and Arhavi could become a natural raptor research center of Turkey.

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