

Experiences with remote linguistic-ethnobiological fieldwork on bird names in the Qaqet language of Papua New Guinea

Henrike Frye

Institute for Linguistics, University of Cologne

Shirley Balar

Independent researcher, Kokopo, East New Britain Province

Aung Si

Institute for Linguistics, University of Cologne

Language-focused ethnobiological research can be a challenging endeavour, even when research teams are able to access their field sites and talk to consultants in person. The challenges are compounded when research must be carried out remotely. In this paper, we present our experiences in carrying out remote linguistic-ethnobiological research on bird names in the Qaqet language spoken in East New Britain Province, Papua New Guinea, with the participation of a locally based research assistant. We discuss the numerous issues faced by the researchers and the assistant and the steps we took collaboratively to overcome these issues. Ultimately, changes were required to the stimulus materials, interview protocol, and consultant selection procedure; these changes were implemented stepwise over a series of four field trips. The data obtained in the process provide the first reliable identifications of culturally important bird species in Qaqet, along with ethnographic reports of the role these birds play in Qaqet society and culture. This, and other preliminary findings on phenomena such as interindividual variation, has indicated fruitful avenues for research, following the end of the current global crisis.

1. Introduction¹ Communities that speak endangered languages are often faced with the loss of traditional knowledge in a range of domains. The loss of traditional ecological knowledge (TEK; the knowledge of plants, animals, and the natural environment) can have particularly adverse impacts on a community, as this knowledge is often linked with a number of other domains, such as religion, nutrition, health,

¹ HF and AS would like to thank Shirley Balar for her enthusiastic participation and brilliant work as research assistant. They are grateful to the Qaqet communities of Raunsepna and Kamanakam for supporting their research. The authors also want to thank Professor Birgit Hellwig for reading the manuscript and providing helpful comments. The helpful comments from two anonymous reviewers are also greatly appreciated. Author HF is funded by the Volkswagen Foundation. Author AS is funded by a Deutsche Forschungsgemeinschaft (DFG) postdoctoral fellowship (Project Number 430905037).

and environmental management (Maffi 2001; Vandebroek et al. 2011). As much of a community's TEK is encoded in its language, field linguists who work on endangered languages are well placed to make a valuable contribution towards the preservation of knowledge and culture alongside language. An obvious starting point in the documentation of TEK is plant and animal nomenclature, as this alone can make up a sizeable proportion of the lexicon of nonurban communities situated in remote locations (Fleck 2007; Pawley 2009; Si 2011).

In this paper, we report our experiences with the documentation of bird names and bird-related TEK with two communities of speakers of the language Qaqet. Qaqet is a language of the Baining family, spoken in East New Britain Province (ENBP) of Papua New Guinea (PNG) by around 10,000 people. It is considered an endangered language (Endangered Languages Project 2021) due to a shift to the lingua franca, and national language, Tok Pisin. Birds are known to play an important role in myth, rituals, initiation ceremonies, and magical practices in various communities in PNG (see Majnep & Bulmer 1977) and around the world. Bird names can hold important clues to the language ecology of a multilingual community, as well as provide insights into the community's belief systems (Döhler 2021). Birds also make a key contribution to the cultural traditions of Qaqet people: while some bird species represent important sources of meat and eggs (e.g., chickens or wild fowls), others are highly prized for their ornamental feathers (e.g., parrots, different types of imperial pigeons, cockatoos, and lorries). Yet others are given prominence in myth and folklore, much of which is described by Hesse (1982): for instance, there is a myth of origin referring to two birds; swiftlets give name to the ceremonial closing of day dances; and eagles, crows, cassowaries, and coucals figure prominently in folk stories as in traditional songs. Fajans (1997: 225) calls birds "omens of change or disruptions" in Baining mythology, as their appearance or call may be interpreted as a warning or an announcement. However, while there has been previous work about birds in Baining lore, many of the Qaqet bird names have been translated as a "kind of bird."

One factor that made our data collection particularly challenging was the outbreak of SARS-COVID-19, which has rendered *in situ* fieldwork impossible to this day. As a result, we were forced to seek out new means of data collection, particularly those which would not pose a health risk to Qaqet people or to us. HF and AS were fortunate to have the participation of a local field assistant, Shirley Balar (SB), who is from the Qaqet community in Raunsepna, but resides in the province capital Kokopo. SB is a graduate student who has finished grade 12 of secondary school. Author HF had worked with her during her last stay in early 2020. SB has no linguistic training, and for the first field trip, she was instructed entirely via WhatsApp chat and later through video calls and video tutorials. SB herself has limited competence in Qaqet, although her father, who grew up in Raunsepna, is a fluent speaker. However, she was eager to learn more about her heritage language, and was planning several trips to Raunsepna anyway, and so she became a crucial member of our project team. In ENBP, there were no cases of Covid-19 between August and December 2020 (Ministry of Communication and Information Technology 2020). As two new cases appeared in the province, after SB came back from her last trip to

the village around mid-December 2020, we stopped all further fieldwork.

Numerous publications and online blogs have appeared over the last twelve months that seek to present new ways of carrying out anthropological and ethnographic research during the pandemic. The Anthropological Responses to COVID-19 project, for example, is a wholly online platform that presents anthropologists' accounts of people's responses to the pandemic in their respective field sites (Geismar & Knox n.d.). A common theme that unites this and other such initiatives is the assumption that certain basic infrastructural elements, such as electricity and a mobile or Wi-Fi signal, would be available to research participants. In most of the scenarios presented, researchers are able to interact with their consultants live, via platforms such as Google Meet (Fazakas & Barabás 2021), or with a delay, using online survey tools or virtual whiteboards (Knoch 2020). Others have also recommended the use of Facebook Groups, podcasts, or live streaming apps as alternatives to face-to-face data collection (Lupton 2020). These new methodologies, while innovative and valuable, are unfortunately ill suited for remote locations like the Qaqet villages of ENBP, where electricity, mobile reception, and internet connectivity do not exist.

The methodology we describe below needed to be flexible by necessity, and HF and AS needed to equip SB with the tools to work independently. Through the linguists' experience in the field and feedback from SB, we were able to modify the stimulus materials and interview protocol between successive field trips. For SB's trips, HF and AS were able to supply her with stimulus materials and interview instructions over the telephone or via email, and she was able to carry out data collection using nothing but a mobile phone and a few popular apps. Naturally, there were numerous challenges at all stages of this endeavour, and in the following sections, we provide a frank exploration of various issues, including stimulus preparation, consultant choice, interview protocol, and data analysis. We also carry out a preliminary analysis of broad patterns in our data, which will serve to inform future research on Qaqet ethno-ornithology.



Figure 1. Map of northern Gazelle Peninsula showing the locations of Raunsepna and Kamanakam

2. Methods

2.1 Field site The Qaqet Baining live on the northern Gazelle Peninsula (figure 1) of ENBP. The data for this study were collected at two field sites, both shown on the map: Raunsepna, lying in the mountainous inland, and Kamanakam, situated directly on the coast. Raunsepna is a remote village, and until 2020, there were no cars approaching the village or any mobile phone coverage. There are few outsiders present, and children grow up largely monolingual in Qaqet until they reach school age (Hellwig 2020). The site is dominated by degraded, tropical, montane rainforest (Wikramanayake et al. 2002) and surrounded by old-growth forest (“big bush”) (Hansen et al. 2013). The climate is humid and cooler than in Kamanakam, where coastal lowland vegetation dominates. Kamanakam is situated by a road that brings cars, people, and goods to and from the towns of Kerevat or Kokopo on a daily basis. Due to the presence of settlers from all over PNG, Tok Pisin is the main language of interaction. Even in pure Qaqet families, there is a shift towards Tok Pisin. Few children in this village learn Qaqet at all, and even younger adults have very limited competence.

The Qaqet live as subsistence gardeners, growing taro and other staples supplemented by a variety of leafy greens. Additionally, peanuts (in the mountains) and cocoa and copra (on the coast) are planted as cash crops. The diet is supplemented by some hunting (especially of birds) and fishing. There is a lot of seasonal migra-

tion between the two villages. Many people in Raunsepna grow cocoa and copra on blocks around Kamanakam, and many people from Kamanakam have relatives in Raunsepna.

New Britain has an abundant avifauna with at least thirty-eight restricted-range species, but this diversity is increasingly threatened by deforestation through logging and oil palm plantations (Davis et al. 2018). Lowland forests, in particular (e.g., around Kamanakam), are disappearing at an alarming rate (Buchanan et al. 2008). Recently, however, deforestation has started occurring at higher altitudes (Davis et al. 2018; personal observation by HF). In 2020, Raunsepna finally became accessible by car as a long-expected road was built by the provincial government.

2.2 Stimuli and data collection Data were collected during semistructured interviews with small groups of consultants ranging from three to five people. The ages of the consultants varied greatly, but every effort was made to ensure that each interview group consisted of people of similar ages. During these interviews, consultants were shown either purely visual stimuli, in the form of colour images of birds, or mixed audio-visual stimuli, consisting of a picture of a bird in colour accompanied by the sound of that bird's call.

The first interviews were carried out by author HF in person, during a field trip to Raunsepna and Kamanakam from January till March 2020 (henceforth, Field Trip 1). The stimuli used during this trip were laminated colour cards measuring 15 cm x 10 cm, which had been printed out at her institute prior to the field trip (see figure 2 and figure 3). The birds for this stimulus set were chosen from the checklist provided on the Avibase website for the birds of East New Britain (<https://avibase.bsc-eoc.org>). At this time, we had no prior information regarding which birds might be important to Qaqet speakers (apart from some large, iconic species, such as the Dwarf Cassowary or the Melanesian Megapode). Birds were selected from the checklist to ensure that every order was represented in the stimulus set, and preference was given to larger, more conspicuous species. The latter was intended to enhance the recognizability of the birds in the stimuli. Nevertheless, there were several small birds represented in the stimulus set. A total of seventy bird species were chosen in this way, and the relevant images were sourced from the internet. This first round of interviews represented an onomasiological approach, as the primary aim was to generate a list of Qaqet bird names, albeit with as many identifications (links to real-world referents) as possible.



Figure 2. Comparing bird pictures on the first field trip



Figure 3. For many older people, the stimulus cards turned out to be too small.

To organize the interviews, people were asked to come at least in pairs, or preferably in small groups, together with people roughly their own age. Once they arrived, it was explained to them that they would be shown pictures of birds that were supposed to occur in East New Britain. They were told that nevertheless, it might be the case that some of the birds in the pictures did not occur around their village. If they did not recognize the birds, they should not worry and should avoid guessing, and instead indicate that they did not know that specific bird. Then the recorder was turned on, and the consultants were presented with the pictures, one after the other, while the researcher announced each bird by number to make sure the names on the recording would be associated with the right picture from the stimulus set. Simultaneously, the researcher noted down each bird name. Consultants were encouraged to not only name the bird represented on each card (if possible) but also share any salient cultural information that they wished. The interviews were recorded with a Zoom H6 audio-recorder and a Shure microphone. HF spoke to the consultants in a mixture of Tok Pisin and Qaqet during these interviews. Figure 4 shows an example stimulus picture, together with a typical response given by the speakers AMS and ARL (Example 1). We did not ask for specific aspects of cultural knowledge but encouraged the participants to provide any kind of knowledge that came to mind regarding the bird in question.



Figure 4. Picture of a stimulus (Metallic Starling; with friendly permission from eBird.org) with an example response (see Example 1)

(1)

HF: Em hia. ‘here’
 AMS: [...] *kokotki o kotkot?* ‘crow?’
 ARL: *ussb!* ‘no!’
 ARL: *dap amamaqaira dap am... ama... [...] deresakniam... amaqirlimga!* ‘but this is... a... a... its eyes... qirlimga!’
 AMS: *a-ee... aqirlimga? Kua luqaira iqa... kates amagamiaira?* ‘aaah! qirlimga? that one that eats fruits?’
 ARL: *aah* ‘yes’
 AMS: *aqirlimga?* ‘qirlimga?’
 ARL: *aqirlimga!* ‘qirlimga!’

Men were considered, and turned out to actually be, the most knowledgeable persons when it came to birds. In mixed-gender interviews, they provided by far the most names; in particular, those men who are known to spend much time in the bush hunting for birds were repeatedly mentioned as experts in the realm of birds. This knowledge allowed SB to choose her participants for the second round of interviews.

Subsequent interviews were carried out by SB, during three field trips to Raunsepna from September to December 2020 (henceforth, Field Trips 2–4). As mentioned above, these field trips were carried out at a time when SARS-COVID-19 case numbers were very low in East New Britain, and SB determined that it was safe to travel to Raunsepna. A new set of stimuli were prepared for the first of SB’s field trips, based on a new checklist of East New Britain birds. The checklist, prepared by ornithologist M. K. Tarburton from Pacific Adventist University (Port Moresby), can be found at <https://birdsofmelanesia.net/png8html/newbritain.pdf>. Although overlapping greatly with the Avibase checklist, the Tarburton checklist has the advantage of including copious notes on the abundance, resident status, and habitat of each species. This time, fifty-three species were chosen, and the composition was altered to exclude certain groups of birds that were not normally encountered by Qaqet speakers. This was based on the results of HF’s first interviews, during which it was determined that both marine and freshwater aquatic birds such as ducks, herons, and terns could not be named by any speaker. Where possible, MP3 recordings of the stimulus birds’ calls were sourced from the website Xeno-Canto (<https://www.xeno-canto.org/>). Due to the difficulties involved in sending the stimulus materials to SB by post, HF and AS opted to use the mobile app WhatsApp to transmit the bird images and sounds. The images of the birds, for which a recording could be found, were first converted into a MP4 (video) file. This allowed a static bird image to be shown on a smartphone while the corresponding bird call was heard simultaneously. During the interviews, SB was supposed to show each bird picture to the consultants on WhatsApp, accompanied by a playback of the corresponding bird call. Before showing each picture, she would say its number so that HF and AS were able to identify the relevant picture. She would then use the WhatsApp voice-messaging function to record the consultants’ responses. As in the first interviews, the speakers were encouraged to add any other information regarding the bird in question that they were aware of, without any specific prompting. Once back in Kokopo, and with

access to the internet, SB would then transmit all the responses to HF and AS (again, via WhatsApp). However, this approach turned out to pose several challenges.






	59 White-browed Crane nepkasapki
	60 Rufous-tailed Bush-hen Aluslti
	68 Pacific Golden Plover Rugingi
	70 Large Sand-Plover nadangirlingi
	73 Ruddy Turnstone gurttik paradulini

Figure 5. An example of the data from Field Trip 2; the birds' pictures are on the left, and the corresponding Qaqet names are noted down by SB on the right.

Although HF and AS had conveyed to SB the need to record bird names from several Qaqet speakers, what SB ultimately did in the field during Field Trip 2 was contrary to the linguists' expectations. Figure 5 shows an example data set transmitted to HF and AS via WhatsApp. Instead of using the mobile photos, SB had printed out the pictures and shown them to the speakers in paper form. This list also contained the English names of the birds, which had originally been intended only for SB's own use. Additionally, SB sent short audio files of fifteen speakers, each saying out loud around ten relevant bird names. Curiously, there was perfect agreement between the audio files and the written names on the pictures. Moreover, the names included direct translations of the birds' English names (e.g., *gurttik paradulini* 'turns stones' for the Ruddy Turnstone). When discussing this via video call, it turned out that SB had one knowledgeable elder provide her with all the bird names. Subsequently, to comply with the linguists' instruction to interview numerous Qaqet

speakers, she had given this list to different speakers and asked each of them to read some of them out for the audio recordings.

This problem was easily overcome by discussing the matter (via WhatsApp video call) with SB and explaining the importance of different participants' opinions. We agreed that, in order to explain this matter to the participants, she would refer to examples of variation in bird naming to avoid giving the impression that she asked several different speakers because she did not trust a particular speaker's opinion. This had the welcome effect that participants started to reflect on variation, and offer alternate names for the same bird with possible explanations as to what the factors of variation were. We also agreed that she would keep the English names to herself to avoid direct translations.

For the subsequent interviews, we decided to alter our method, starting from the bird name itself. This was motivated by the fact that by then, we had a long list of bird names, though for many of them, we could not be sure which species they actually designated. However, they allowed us to prepare the second form of interview, this time taking a semasiological approach.

HF and AS further refined the stimulus set for SB's second and third field trips (Field Trips 3 and 4), this time focusing on only thirty-four birds, for which we had conflicting Qaqet names. The linguists also included a control group of seven birds, for which they already had reliable and consistent identifications. In order to make the stimuli as clear as possible for the consultants, they presented three images for each species, showing the bird in a variety of poses, and with contextualizing information (e.g., a human hand holding the bird) that revealed its true size. HF and AS prepared nine colour plates with five birds per plate (hence a total of fifteen images; see figure 6 and figure 7) and emailed the PDF files to SB, who printed them out in A3 format. Similar-looking species were grouped together as far as possible on a plate, to allow consultants to make explicit comparisons between them. All nine plates were first laid out in front of the consultants. Each species was numbered, which allowed SB to indicate which bird was being talked about. This time, she told the participants the names of the bird in question and asked them to point to the relevant pictures. When the participants had decided, she played them an audio file of the corresponding bird's call to verify their choice. Afterwards, SB would ask the participants if they knew anything else about the relevant bird: related birds, food, preferred habitat, appearance in children's or mythological stories, the meaning of the name, and the bird's edibility. This time, the names and accompanying discussion were recorded using an Android smartphone's built-in recording app (Voice Recorder) and later transmitted to HF and AS via Dropbox. For communication, we switched to the chat program Signal instead of WhatsApp for increased data protection. In addition to the stimulus material, HF and AS also sent SB a short video clip in which HF and her husband (Patrick Jahn) performed a mock-interview with the same stimuli. The video-tutorial was aimed at making the procedure clearer to SB. Indeed, she confirmed that she found this to be the most helpful part of the instructions. Subsequently, SB sent five one-hour recordings of interviews with two speakers each.



Figure 6. A couple during a bird interview, Field Trip 3



Figure 7. SB with one of the bird plates

3. Results and discussion After the first interviews conducted by HF during Field Trip 1, we obtained a total of 172 different bird names for only 70 birds depicted in the flashcards. This was mainly due to the choice of mere pictures as a means of elicitation, which is a difficulty that was also noted by Kulick & Terrill (2020: 445). Pictures can exaggerate or understate the size of the birds, show them in close-ups that consultants may be unfamiliar with, and lack a lot of critical information. Usually, birds are seen as they move through a specific environment, and their movement patterns, calls, and habitats are important additional criteria for identification. In static pictures, none of these cues are available. Moreover, older people in particular had weak eyesight, and they were often unable to identify the bird, despite knowledge of the species and its name (see figure 3). Consequently, older people's knowledge was often underestimated in the first round of our data collection, even though younger consultants often stated that some bird names might only be known by older speakers. The difficulties involved in identifying birds from static images could have been partially resolved by the second set of stimuli, where pictures were combined with audio files. However, as mentioned above, these new stimuli were only shown to a single person during Field Trip 2, which makes it difficult to assess their effectiveness at this stage. In the remainder of this paper, therefore, we focus on the issues pertaining to interviews based only on visual stimuli (Field Trips 1, 3, and 4). Note, however, that table 1 includes data collated from all interview situations (including Field Trip 2). Under more favourable circumstances, a documentary linguist working in the field might be accompanied by an ornithologist (e.g., Diamond & Bishop 1999; Agnihotri & Si 2012), who would provide information in addition to the stimulus pictures and thereby facilitate identification – this could include information pertaining to the bird's actual size, preferred habitat, diet, patterns of activity (nocturnal or diurnal), or any striking behaviours. In the absence of an expert on local bird fauna, the linguist might obtain similar facts from a field guide, such as Pratt & Beehler (2014) or Gregory (2017). As our data collection was carried out remotely, Qaquet consultants had to rely solely on the stimulus pictures, and no supplementary information was available to them.

The use of static images as the primary elicitation stimulus understandably led to conflicting results from different consultants. However, a combination of different criteria still made it possible to arrive at reliable and consistent Qaquet names for a range of different birds. Prominent species like the Dwarf Cassowary (*usimgi*), the Papuan Hornbill (*maraga*), or the Blue-eyed Cockatoo (*laapki*) were identified by nearly everyone. A bird name was considered to be reliable if it occurred in at least seven interviews for the same picture. There were also cover terms subsuming several species within a common name, such as *gamenngi* for imperial doves or *dingbrini* for small birds that drink nectar from flowers (and “are hard to hit with stones”). Some other birds were named only by a handful of groups, but these were consistently labelled by an identical term, which was not offered for any other bird. This occurred, for example, for the Large-tailed Nightjar (*arekmuqi*) and the White-backed Woodswallow (*leginga*). We considered such names to be reliable as well.

For some related species, the differences among them were not detectable from the pictures. In such cases, it was occasionally helpful to make use of speakers' ad-

ditional knowledge about the relevant species. For different hawks, for example, people could list a variety of names but rarely tell which of those belonged to which picture; such confusion surrounding birds of prey is commonly observed in ethno-ornithological research (e.g., see Majnep & Bulmer 1977: 146 on the difficulties in identifying diurnal raptors in Kalam in the PNG Central Highlands). Consultants could, however, sort the hawks by size, and the criterion of size was spontaneously mentioned by interview participants from six groups. In New Britain, there are four types of hawks, according to Gregory (2017): Meyer's Goshawk (measuring 43–53 cm head to tail, with a wingspan (WS) of 86–105 cm), New Britain Sparrowhawk (27–34 cm, WS 50–62 cm), Slaty-backed Goshawk (28–36 cm, WS 55–65 cm), and New Britain Goshawk (38–45 cm, WS 75–86 cm). Combining this information with Qaquet speakers' ranking of the birds by size, we tentatively propose that Meyer's Goshawk is called *nguisaqa* in Qaquet, as it is said to be the biggest; the New Britain Goshawk would be called *sirlkik pilany*; and the two smaller hawk species *rebaska*. Two birds were found to have different names in the two field sites: the Pied Coucal is called *rlamgi* in Raunsepna, while in Kamanakam, it is known as *vilangi*. Similarly, the Olive-backed Sunbird, along with all other kinds of small birds, are called *ding-brini* in Raunsepna but *uitpetka* in Kamanakam. We consider both sets of names to be reliable and indicative of dialectal variation.

Several birds that were part of the stimulus set were subsequently excluded from further investigations, as it was not possible to decide which of the variety of names was the right one. The Bismarck Fantail, for example, received as many as nine different names, none of them occurring twice. Some of the birds, whose photos elicited multiple names, may not occur at all in Raunsepna or Kamanakam, which is why for the second set of interviews, led by SB, we refined the stimuli, paying special attention to how common the relevant birds are in the region.

For some birds, there was not much agreement in the onomasiological interviews (Field Trips 1 and 2), while in the semasiological ones (Field Trips 3 and 4), there was a high degree of accord. This happened, for example, with *rengit tengitka* 'White-mantled Kingfisher' and *lageraska* 'Black-capped Kingfisher.' These two species had not been included in the original stimulus set (administered by HF), and people appeared to randomly assign one of those two Qaquet names to the pictures of other kingfisher species that they were shown. However, in the semasiological interviews, when pictures of all kingfishers resident in ENBP were included, all the participants matched the same picture with the relevant name. In the first round of interviews, people had obviously voted for the best option available, as they were unable to find a picture of the correct species. When the actual referents were included into the stimulus, however, they could be identified accurately, and the previously chosen birds were not considered to be appropriate choices anymore.

Our final list of bird names can be seen in table 1.² Thirty-six of the bird names presented here can be confidently identified and associated with their scientific name.

² Note on transcription: in intervocalic position, <q> is pronounced as [j] when preceding /i/ and as [ɣ] when followed by any other vowel; <rl> is pronounced [ɾ] and <r> as [r]; voiced plosives are prenasalized (Hellwig 2019).

These are presented in bold. Then there are several birds for which identification can be safely made down to the level of family (e.g., “parrots”) but not to the level of genus or species. In those cases, all the possible referents of the name are given in the last column of table 1. It is likely that some of these terms do not designate a single species. Additionally, there may well be more variation within the communities or between the two communities than we were able to detect. The issue of variation between and within communities is quite complex, and will be discussed in detail in a later publication.

Table 1. Qaqet bird names with Tok Pisin and English equivalents. Names in bold are bird names for which reliable scientific identifications were obtained. Names with superscript (1) used only in Kamanakam Village.

Qaqet name	Alternat. Qaqet name	Tok Pisin	English common names with notes
aneska		kalangar	Eclectus Parrot, male
<i>sirlik pilany</i>		kabibi	hawks (e.g., New Britain Sparrowhawk,
<i>rebaska</i> (small)			New Britain Goshawk, Slaty-backed Sparrowhawk)
<i>nguisaqa</i> (big)			
brlasuqa		minigulai	Osprey; also used for Brahminy Kite
bunaqa			fruit doves Knob-billed Fruit-Dove, Yellow-bibbed Fruit-Dove
<i>dingbrini</i> (<i>dingbetka</i>)	c.f. <i>uitpetka</i> ¹		Olive-backed Sunbird; Black Sunbird; general term for small birds that drink from flowers
durlaki	<i>karuki</i>	kakaruk	chicken
<i>gamenngi</i>	<i>baluski</i>	balus	pigeons, especially imperial pigeons; Island Imperial-Pigeon
glaviqi			cuckoo doves
itupka			imperial pigeons, light coloured
ivilki		mukmuk	Violaceous Coucal
kailuqi		taragau	Brahminy Kite, also Osprey
laapka		longnek	Great Egret; Australian Darter
laapki		koki	Blue-eyed Cockatoo
lageraska		dima	Black-capped Paradise-Kingfisher
leginga			White-backed Woodswallow

<i>lurki</i>			Dusky Moorhen
<i>maraga</i>		kokomo	Papuan Hornbill
<i>matka</i>			Pygmy Parrot
<i>nadagiraqi</i>			Willy Wagtail
<i>naksenaski</i>			Island Imperial-Pigeon, Finsch's Imperial-Pigeon
<i>nguatka</i>		kotkot	Bismarck Crow
<i>qaduqa</i>		kao	New Britain Friarbird
<i>qelem-gurlikka</i>	<i>qelemga</i>		Rainbow Bee-eater
<i>qeseqesekki</i>			dark-coloured imperial pigeons: Black Imperial-Pigeon, Papuan Mountain-Pigeon
<i>qilutki</i>			Eclectus Parrot, female
<i>qirletka</i>		kulinga	Red-flanked Lory; Red-chinned Lorikeet; Green-fronted Hanging Parrot
<i>qirlingga</i>		redai	Metallic Starling
<i>(ka)qiuqa</i>	<i>kaiapki</i>	welpau	Melanesian Scrubfowl
<i>ququanngi</i>	<i>olaqi</i>	kurkur	owls
<i>rekmuqi</i>			nightjars; owls
<i>rengirlki</i>	<i>ringerem</i>	malip	Coconut Lorikeet Purple-bellied Lory
<i>rengit tingitka</i>			White-mantled Kingfisher, other blue kingfishers
<i>rlamgi</i>	<i>vilangi</i> ¹	mukmuk	Pied Coucal
<i>rlevuum</i>			Ground Dove; possibly also some other pigeons (e.g., Metallic Pigeon)
<i>rliin-merarilany</i>	<i>patoqi</i>	pato	ducks; perhaps Pacific Black Duck
<i>ququinngi</i>			Buff-banded Rail
<i>(su)suvirlinnga</i>			Spangled Drongo
<i>siiligel</i>	<i>siilaqa</i>		Black Honey-Buzzard
<i>suqini</i>			Small, parrot-like bird
<i>suwangini</i>			Glossy Swiftlet; possibly also some other swift(let)s

<i>uitpetka</i> ¹	c.f. <i>dingbrini</i>	witwit, tenge	Olive-backed Sunbird; Black Sunbird; general term for small birds that drink from flowers
<i>usimgi</i>	<i>murupki</i>	muruk	Dwarf Cassowary
<i>vilangi</i> ¹	c.f. <i>rlamgi</i>	mukmuk	Pied Coucal

Most of the bird names displayed in table 1 are used with a noun class suffix. Qaqet has two sex-based and six shape-based classes (Hellwig 2019: 175). Most of the bird names take the female suffix *-ki* (with the allomorphs *-gi* and *-qi*) or the male *-ka* (with the allomorphs *-ga* and *-qa*) in their citation form. The semantic meaning is normally not related to the birds' sex, except in the case of the Eclectus Parrot, which shows sexual dimorphism (males are green, females red). However, when asked about the meaning of the bird name with the opposite suffix, speakers agree that this would then denote only the bird of the relevant sex. This is in contrast to the citation form, which denotes both the bird ethnospecies as well as an individual bird with the sex indicated by the usual suffix. An interesting exception is the pair *laapki* 'Blue-eyed Cockatoo' and *laapka* 'Great Egret/Australian Darter,' where the two names are used for entirely different species, even though they appear to be the male and female of the same ethnospecies.

Several bird names belong to one of the shape-based classes: *dingbrini/uitpeqini* and *suvangini* include the suffix *-ini* 'DIMINUTIVE,' which fits their description as small birds. The name *revvuum* includes the *-em* 'reduced' suffix for "short, stumpy, or compact" referents (Hellwig 2019: 188), realized as [um] because of the preceding /u/. Curiously, the Black Honey-Buzzard is called *siiligel*, where the *-igel* is the suffix for "excised, for referents that are parts of a whole" (Hellwig 2019: 188).

Several of the names in table 1 are clearly onomatopoeical: *dingbrini* (described as 'small birds drinking nectar, hard to shoot') was identified as being prototypically the Olive-backed Sunbird. Consultants explained that its name is compositional and can be analysed as follows: *ding-pet-ini* 'SOUND-at-DIMINUTIVE,' which refers in general to birds whose call sounds similar to "dingding." This name was only recorded in Raunsepna, and the explanation was provided by several speakers there. In Kamanakam, the corresponding name is *uitpetki*, which is built in a similar way, only that the Kamanakam birds seem to make the sound "uituit" instead of "dingding." Also, for *ququanngi* 'owl,' several participants commented that the name refers to the owl's call, which is described as "ququ." While some people can skilfully imitate bird calls (indeed, a handful of individuals did so spontaneously and quite frequently), we found no instances of "warblish" (Sarvasy 2016) (i.e., verbal mimicry of bird calls using existing, non-onomatopoeic words).

Names can refer to sounds made by the referent birds in other ways: *nakse-naski* 'Island Imperial-Pigeon, Finsch's Imperial-Pigeon' is analysed as *nak-se-nas-ki* 'cry-for-self-F' as the bird is perceived to be crying for itself. The name *qeseqesekki* 'Black Imperial-Pigeon, Papuan Mountain-Pigeon' is descriptive of the birds' wing sounds. Participants described the sound of a flock of those birds as *seqesek pranget*

‘they make a whistling sound.’ Yet other birds are named with reference to their feeding habits, behaviour, or appearance: *sirlik pilany* ‘hawk species’ means ‘meat in his claws,’ and *gamenngi* ‘imperial pigeon’ eats fruits called *gam*. The *lageraska* ‘Black-capped Paradise-Kingfisher’ builds its nest from *lageraqi*, a sort of grass that grows deep inside the bush. Other birds like the *aneska* ‘male Eclectus Parrot,’ which is a bright green (*nes*), and the *laapki* ‘Blue-eyed Cockatoo,’ which is creamy white (*laap*), are either named for their colour or were the eponym of the colour term. This point needs to be investigated further.

Another naming pattern consists of loanwords from Tok Pisin (mostly of Kuanua³ origin) that are used with a Qaqet noun class suffix, such as *murup-ki* ‘Dwarf Cassowary’ or *balus-ki* ‘generic for several species of imperial pigeons.’ There are Qaqet expressions for both these birds, but several of the participants preferred to use the Tok Pisin loans instead of the Qaqet ones. This is especially true for the Kamanakam group, and it remains to be seen if there are underlying sociolinguistic or ethnobiological factors that predispose certain Tok Pisin names to being adopted in preference to native Qaqet names. Still, the cassowary is one of the best-known birds: it was correctly identified and named in the first interviews by all interview groups. Only few other birds are better known in the community; these include the kingfishers (mentioned by consultants from all twenty interview groups), Bismarck Crow (18 groups), Blue-eyed Cockatoo (20), Dwarf Cassowary (20), New Britain Friarbird (18), Papuan Hornbill (19), and Eclectus Parrot (20). In the interviews where participants did not identify these birds correctly, they were often confused with similar birds (e.g., a Bismarck Crow was interpreted as a Metallic Starling), or else the speakers were not sure and preferred not to guess.

Most of the well-known birds listed above have a very distinct appearance, but a noteworthy exception is the *qaduqa* ‘New Britain Friarbird.’ However, it has a highly salient call, which is easily recognized and is well known in the community as the bird that starts to sing before sunrise. Some participants even commented that its name may be used metaphorically for ‘dawn’: *pramaqadu* meaning ‘at dawn.’ Its early call reminds people to get up and go to the garden. The first call of an owl, on the contrary, is a sign that the children should go to bed.

The birds that are best known to the participants are also those which appear in stories and tales or are used for ritual purposes. One story explains how the *usimgi* ‘Dwarf Cassowary’ left the trees when the *maraga* ‘Papuan Hornbill’ promised to provide it with fruits from the trees.⁴ Another story is told about the *rengirki* (a kind of parrot) stealing the beautiful plumage of the *qaduqa* ‘New Britain Friarbird’ as

³ Kuanua is the language of the Tolai, the Qaqet’s neighbouring community.

⁴ Fajans (1997: 226) reports the same story, but instead of the hornbill, it is a lorikeet that “tricks the cassowary into staying on the ground.”

the latter was taking a bath in the river.⁵ However, the *rekmuqi* ‘Large-tailed Nightjar’ is mythologically known to have the potential to turn men invisible, but was only identified in three interviews. This may be due to the taboo or secret nature of the associated myth. The use of cockatoo and parrot feathers for men’s attire during the traditional spear dance, on the other hand, was mentioned frequently. The *suvangini* ‘Glossy/White-rumped Swiftlet’ is well known, as it gives its name to the last dance of the spear dance, which imitates its circling flight style (see also Hesse 1982: 66). As the birds are frequently observed flying around during heavy rain, some participants reasoned the swiftlet might be responsible for rainfall.

Several birds are considered a bad omen (e.g., the *rlamgi* ‘Pied Coucal,’ whose call announces death). Other birds like the *nadagiraqi* ‘Willy Wagtail’ are regarded as messengers, their call being heard when someone is approaching. The appearance or call of several birds is interpreted to have meaning for the practice of garden work: if someone kills a Friarbird, for example, s/he should make a new garden at a different location. The *qaibiqi* (unidentified), on the other hand, reminds the gardener to work properly.

Men, in particular, were more knowledgeable about birds (e.g., their calls, preferred food, and habitats).⁶ They referred to several types of habitats: big bush, bush, gardens, riparian, and coastal regions. The Violaceous Coucal, for example, is known to prefer large trees in the deep bush, while the White-mantled Kingfisher likes to sit on the branches of trees in coastal regions. Even boys as young as twelve know a variety of bird names, as they start to practice shooting them with a catapult from young age. However, women can also provide extended descriptions of the behaviours of some birds, and especially of those dwelling in the garden and around the village.

All birds may be eaten, although the fatter ones like cuckoo doves or fruit doves are preferred. Occasionally, cockatoos (see figure 8) or parrots may be kept as pets and taught to speak. This practice has also been reported among the Kalam people of the Central Highlands (Majnep & Bulmer 1977) and may well occur over much of PNG.

⁵ This story seems to have spread all over PNG, although the actors differ: Among the Awiakay (East Sepik), it involves a bird-of-paradise and a Great Black Coucal (Darja Hoenigman, personal communication). In Ranmo (Western Province), a Cassowary and another, yet unidentified, bird are the protagonists. Also in the Western Province, Komnzo speakers tell a similar story involving a bird-of-paradise and the Brolga, while for the Bine, the conflict arises between a bird-of-paradise and an unknown black bird (Christian Doehler, personal communication).

⁶ Women do not hesitate, however, to interrupt men or question their assumptions, and they are often the first ones to talk or respond. Especially given that all the interviews were conducted by a female interviewer, we are confident that the inequality in knowledge about birds is not due to an imbalance in social hierarchy.



Figure 8. Girl trying to make friends with a tame Blue-eyed Cockatoo

4. Conclusions We faced a number of unexpected challenges over the course of our remote fieldwork on the Qaqet language. Firstly, as we had no first-hand knowledge of the birds that might be culturally relevant to Qaqet people, we included several irrelevant species – such as ducks and herons – in the initial stimulus set. Secondly, when SB joined the project, HF and AS failed to unambiguously communicate to her our interest in interindividual variation; as a result, she obtained a list of bird names from a single knowledgeable Qaqet speaker and asked other people in the village to repeat those names. It was only during the last field trip by SB that all the required factors – namely, sufficient domain-specific background knowledge, an appropriate stimulus set, and a well-defined interview protocol – came together to provide a reliable data set. While we are confident that the bird names and their referents presented in table 1 are accurate, we also believe that we have merely scratched the surface of Qaqet ethno-ornithological knowledge and bird lore. This is particularly evident from the fact that we still do not have reliable identifications for over a hundred bird names recorded on the first field trip (as mentioned above, a total of 172 unique names were recorded then). Whether some of these names are merely synonyms of the birds we have been able to identify or whether a hundred additional birds species are recognised and named by Qaqet speakers remains to be seen. Several interesting avenues of research can be identified from the other preliminary findings that were briefly discussed above. From an ethnobiological and ethnographic point of view, issues such as gender-based differences in interactions with birds and the depiction of birds in folklore, myth, and ceremony remain to be investigated in detail. From

a linguistic point of view, topics that merit future research are intercommunity and interindividual differences in naming practices, the acquisition of bird names by children (particularly relevant in a language endangerment scenario), and contact-based adoption of bird names into Qaqet from neighbouring languages.

As much as we would like to continue this work, the situation surrounding Covid-19 has made short- to medium-term planning impossible. Field researchers from developed countries may well receive their vaccinations soon (or may already be vaccinated), but it is unlikely that this will happen to the inhabitants of Raunsepna in the near future. Travelling to such locations therefore poses an unacceptable risk to local people. We have shown that remote digital fieldwork with local coworkers can be a fruitful endeavour; apart from allowing data collection during the current crisis, our protocol has the added benefits of a much-reduced carbon footprint and of a high level of agency in the hands of locals. But as SB has recently begun her studies in computer science and is no longer available, HF and AS will first have to look for another local coworker (with sufficient expertise and resources in terms of digital technologies). Before requesting that a coworker carry out fieldwork on the linguists' behalf, HF and AS will also have to wait for the Covid-19 situation in ENBP to improve and stabilise. However, in the meantime, HF is working on a bilingual children's book including bird names and pictures, stories, and children's songs. Once finished, these copies could probably be sent to Kokopo and passed on to community members who could take them to the library of Raunsepna, which was also built with money from a crowdfunding project hosted by the Cologne-based Gesellschaft für bedrohte Sprachen (GBS, or Society for Endangered Languages).

References


- Agnihotri, Samira & Aung Si. 2012. Solega ethno-ornithology. *Journal of Ethnobiology* 32(2). 185–211. [doi:10.2993/0278-0771-32.2.185](https://doi.org/10.2993/0278-0771-32.2.185)
- Buchanan, Graeme, Stuart Butchart, Guy Dutson, John Pilgrim, Marc Steininger, K. David Bishop, & Philippe Mayaux. 2008. Using remote sensing to inform conservation status assessment: Estimates of recent deforestation rates on New Britain and the impacts upon endemic birds. *Biological Conservation* 141(1). 56–66. [doi:10.1016/j.biocon.2007.08.023](https://doi.org/10.1016/j.biocon.2007.08.023)
- Endangered Languages Project. 2021. *The catalogue of endangered languages (El-Cat)*. (<http://endangeredlanguages.com/userquery/download/>) (Accessed 2021-12-04.)
- Davis, Robert, Guy Dutson, & Judit Szabo. 2018. Conservation status of threatened and endemic birds of New Britain, Papua New Guinea. *Bird Conservation International* 28(3). 439–450. [doi:10.1017/S0959270917000156](https://doi.org/10.1017/S0959270917000156)

- Diamond, Jared & K. David Bishop. 1999. Ethno-ornithology of the Ketengban people, Indonesian New Guinea. In Medin, Douglas & Scott Atran (eds.), *Folkbiology*, 17–45. Cambridge: MIT Press. [doi:10.7551/mitpress/3042.003.0003](https://doi.org/10.7551/mitpress/3042.003.0003)
- Döhler, Christian. 2021. Birds and places: What the lexicon reveals about multilingualism. *International Journal of Bilingualism*. [doi:10.1177/13670069211023158](https://doi.org/10.1177/13670069211023158)
- Fajans, Jane. 1997. *They make themselves: Work and play among the Baining of Papua New Guinea*. Chicago: University of Chicago Press.
- Fazakas, Noémi & Blanka Barabás. 2021. Reinventing linguistic ethnographic fieldwork during the COVID-19 pandemic. *Hungarian Studies Yearbook* 2(1). 113–122. [doi:10.2478/hsy-2020-0009](https://doi.org/10.2478/hsy-2020-0009)
- Fleck, David. 2007. Field linguistics meets biology: How to obtain scientific designations for plant and animal names. *Language Typology and Universals* 60(1). 81–91. [doi:10.1524/stuf.2007.60.1.81](https://doi.org/10.1524/stuf.2007.60.1.81)
- Geismar, Haidy & Hannah Knox. n.d. *Collecting COVID-19: Anthropological responses*, (<https://anthrocovid.com/>) (Accessed 2021-03-18.)
- Gregory, Phil. 2017. *Birds of New Guinea: Including Bismarck Archipelago and Bougainville*. Barcelona: Lynx Editions.
- Hansen, Matthew C., Peter V. Potapov, Rebecca Moore, Matt Hancher, Svetlana A. Turubanova, Alexandra Tyukavina, David Thau, Stephen V. Stehman, S. J. Goetz, Thomas R. Loveland, Anil Kommareddy, A. Egorov, Louise Chini, Christopher O. Justice, & John R. G. Townshend. 2013. High-resolution global maps of 21st-century forest cover change. *Science* 342(6160). 850–853. [doi:10.1126/science.1244693](https://doi.org/10.1126/science.1244693)
- Hellwig, Birgit. 2019. *A grammar of Qaquet*. Berlin: Mouton de Gruyter.
- Hellwig, Birgit. 2020. Child language documentation: A pilot project in Papua New Guinea. In Penfield, Susan (ed.), *Interdisciplinary approaches to language documentation* (Language Documentation & Conservation Special Publication No. 21), 23–52. Honolulu: University of Hawai i Press. (<http://hdl.handle.net/10125/24942>)
- Hesse, Karl. 1982. *Baining life and lore*. Port Moresby: University of Papua New Guinea Press.
- Knoch, Carsten. 2020. Ethnography in/of the pandemic, follow-up session 3: Methods and tools. *Ethnography Lab*, July 7. (<https://ethnographylab.ca/2020/07/07/ethnography-in-of-the-pandemic-follow-up-session-3-methods-and-tools/>) (Accessed 2021-03-18.)
- Kulick, Don & Angela Terrill. 2020. *A grammar and dictionary of Tayap: The life and death of a Papuan language*. Berlin: Mouton de Gruyter.
- Lupton, Deborah. 2020. *Doing fieldwork in a pandemic* [Crowd-sourced document]. (<https://docs.google.com/document/d/1clGjGABB2h2qbduTgqribHmog9B6P0NvMgVuiHZCl8/edit?ts=5e88ae0a#>) (Accessed 2021-03-18.)
- Maffi, Luisa. 2001. Introduction: On the interdependence of biological and cultural diversity. In Maffi, Luisa (ed.), *On biocultural diversity: Linking language, knowledge, and the environment*, 1–52. Washington, DC: Smithsonian Institution Press.

- Majnep, Ian & Ralph Bulmer. 1977. *Birds of my Kalam country*. Auckland: Auckland University Press.
- Ministry of Communication and Information Technology. 2020. *Information Center for COVID-19 in Papua New Guinea*. (<https://covid19.info.gov.pg/>) (Accessed 2021-03-18.)
- Pawley, Andrew. 2009. On the treatment of animal and plant names in bilingual dictionaries: Lessons from Oceania. (Presented at the Eleventh International Conference on Austronesian Linguistics, Aussois, 22–26 June.)
- Pratt, Thane & Bruce Beehler. 2014. *Birds of New Guinea: Second edition*. Princeton: Princeton University Press.
- Sarvasy, Hannah. 2016. Warblish: Verbal mimicry of birdsong. *Journal of Ethnobiology* 36(4). 765–782. [doi:10.2993/0278-0771-36.4.765](https://doi.org/10.2993/0278-0771-36.4.765)
- Si, Aung. 2011. Biology in language documentation. *Language Documentation & Conservation* 5. 169–186. (<http://hdl.handle.net/10125/4497>)
- Vandebroek, Ina, Victoria Reyes-García, Ulysses P. De Albuquerque, Rainer Bussmann, & Andrea Pieroni. 2011. Local knowledge: Who cares? *Journal of Ethnobiology and Ethnomedicine* 7(35). [doi:10.1186/1746-4269-7-35](https://doi.org/10.1186/1746-4269-7-35)
- Wikramanayake, Eric, Eric Dinerstein, Colby Loucks, David Olson, John Morrison, John Lamoreaux, & Elery Hamilton-Smith. 2002. *Terrestrial ecoregions of the Indo-Pacific: A conservation assessment*. Washington, DC: Island Press.


Henrike Frye

henrike.frye@posteo.de

 orcid.org/0000-0002-6218-1965

Aung Si

asi@uni-koeln.de

 orcid.org/0000-0001-8115-9176