

Indigenous Knowledges, Birds that Have 'Spoken' and Science

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Knowledges and ethno-ornithology

The accumulated knowledge of indigenous peoples has enabled them to survive and flourish in some of the most difficult environments of the world, and to develop rich and diverse cultures that describe quite different relationships with their surroundings from those of most Western cultures. In order to understand and appreciate indigenous perspectives on creatures such as birds, it is necessary first to review how indigenous peoples view the world, and how their knowledge is produced, owned and recorded (Medin and Atran, 1999).

Indigenous peoples have been accumulating knowledge for many generations about their interactions with the physical and spiritual world through processes of conceiving, considering and experimenting (Arbon, 2008; Trätzer et al, 2008). Typically, the knowledge that results from these processes is unique to the particular indigenous group and the specific geographical location. Accordingly, there is no one homogeneous body of indigenous knowledge; neither are there globally recognizable methods of categorizing, as there are for the Western disciplines. It is therefore not surprising that some researchers describe what is known by indigenous peoples as *local knowledges* (Briggs et al, 2006).

What indigenous peoples know about the world, and the place of people in it, forms a broad understanding of existence that is intertwined with spirituality, language and the environment. Indigenous knowledge is therefore variously described by Western scholars as holistic (Christie, 2006), utilitarian and grounded (Briggs et al, 2006), but by indigenous peoples themselves as 'a living, breathing concept' (Whap, 2001) that is relational, pluralistic and infinite (Malloch, 1989; Little Bear, 2000; Shiva, 2000). Irrespective of how it is described, the central tenet of indigenous knowledge is connectivity, where

all elements may be infused with spirit and where human life is not superior to other elements (Johnson, 1992). The place of spirituality in 'other knowledges' may be hard for the Western mind to grasp; but it is a dominant feature of many indigenous cultures. From the indigenous perspective, it is the Western way that misses this: the Western culture is the only culture in the world – perhaps the only culture that the world has ever known – that argues for the non-existence of any dimension or reality which the senses cannot perceive. Accordingly, every alternative to scientific, sensorial reality is rendered as metaphor (Lehman, 2008).

Indigenous knowledge is passed to successive generations by cultural transmission (Berkes, 1999). Symbols and totems, art, song, ritual ceremonies and dance (Janke, 2005) may be used, or in a more prosaic setting a young weaver or hunter or gardener may learn by working with older people. There may be chosen 'keepers' who have the responsibility to both safeguard and transmit portions of the knowledge to future generations (Bell et al., 2007), or particular forms of knowledge that belong to a specific demographic within the group such as one sex or a particular family (Bourke, 1997; Whap, 2001).

Over the last three decades there has gradually been wider and better understanding and appreciation of the indigenous perspective and indigenous knowledge. This has occurred as more and more indigenous scholars have taken their place in academia and presented their ontological and epistemological stance using the medium that Western scholars understand, and as some Western scholars have developed a more nuanced approach to studying indigenous knowledge. Many indigenous scholars have argued strongly for the parallel status of their knowledge in academia (Raseroka, 2008). They argue for their form of knowledge, which represents many different ways of making sense of the world, to be extended alongside that of existing Western knowledge (Tuhiwai Smith, 1999).

There is also an argument for the improved status of the methodologies used in the collection and interpretation of knowledge. Some indigenous researchers feel that, at best, certain methodologies favoured in the collection and interpretation of indigenous knowledge have had little acceptance by Western academics as authentic research tools (Lekolo, 2007). The methodologies of narrative and storytelling are two of these, and have revealed a lot of the knowledge about birds presented in this book. Narrative has, however, gradually found a place in a plethora of Western disciplines in many diverse forms, and has been identified as a methodology that enables individuals to claim identity (Reissman, 2008). While Western minds may have issues with validation in both narration and storytelling, from the indigenous perspective it is the relationship between the researcher and the narrator who claims to have the right to narrate, the authorship of stories and the intelligibility of the work that are important considerations (Lekolo, 2007).

In applying a Western perspective to indigenous knowledge, it has been compartmentalized and disconnected from the history and culture of which it is part (Sillitoe, 1998; Ellis and West, 2004). Although the antithesis of the

indigenous worldview, this process has contributed to the understanding of indigenous knowledge with terms such as ethno-ecology, ethnobotany, ethno-ornithology, indigenous knowledge and traditional ecological knowledge (TEK), now commonplace and useful constructs, particularly for those brought up in the Western paradigm. These terms also provide a useful base and starting point in the dialogue between indigenous and Western bodies of knowledge.

Birds that have 'spoken' and science

The focus of this book is *ethno-ornithology*. Ethno-ornithology is a Western term, although, as a concept, it is embraced by many cultures across the world. It is more than ornithology or just 'the study of birds in cultures: it is all that, but it is also more. Portrayals of birds through art, patterns of utilization, language, life from creation to death, bearers of messages and interactions in everyday life are all examples of ethno-ornithology. As a term, ethno-ornithology is useful because it refers broadly to the complex of inter-relationships between birds, humans and all other living and non-living things, whether in terrestrial or extra-terrestrial spheres or in body or in spirit.

Too often, ethno-ornithological knowledge is reported from the perspective of an outsider and therefore appears to be in some way devalued. The terms *legends*, *fables*, *tales*, *myths* and *stories* are frequently used for indigenous knowledge, but not always in a way that engenders respect or an understanding of the place of birds in cultures. As an example, del Hoyo et al (1992) report that Cassowaries *Casuarus* spp. of the island of New Guinea are of 'great ritual and mystical significance. They appear in numerous legends and tribal tales and many strange beliefs are held about them.'

The importance of birds in non-Western cultures is all too frequently ignored in even the most comprehensive of Western texts. For example, in Australia, the Emu *Dromaius novaehollandiae*, a large, iconic flightless bird, can be found across about three-quarters of the continent. Despite there being dozens of published accounts of Emus from over 40 Aboriginal languages, not a single mention of Emus from an Aboriginal perspective occurs in the authoritative *Handbook of the Birds of the World* (edited by del Hoyo et al, 1992–2008).

This book will have succeeded if it does nothing more than raise awareness of alternative bodies of ornithological knowledge. This introductory chapter looks at indigenous knowledge and ethno-ornithological knowledge. It examines portrayals of birds from an historical perspective and uses this platform to introduce the chapters in Part II. Chapters 2 and 3 look broadly at ethno-ornithology, its relationships with conservation and its wider significance for the increasingly globalized, and globalizing, Western cultures of the world.

Historically, birds have been prominent in art, literature and sculpture, have been accredited with supernatural powers, have played a role in songs,

ceremony and dance, as well as day-to-day existence, and have been linked to both death and some of life's greatest challenges. Birds have featured widely in art for thousands of years – they are sometimes represented in stylized form, without being clearly identifiable as a particular species, and their feather products appear in art or as artefacts. Their functions in artistic depiction range from simple to ornate decoration, from symbols of religious significance through to symbols of power and links both with things of, and not of, this Earth (a distinction which might not be made by the creator of the art or artefacts themselves).

Egyptian art shows relief sculptures of birds, dating back to about 3100 BC and a variety of species, including Hoopoe *Upupa epops*, occurring in the carved hieroglyphs, the painted mud of tombs, wooden sarcophagi and painted chests found in tombs. Also occurring are depictions of the Sacred Ibis *Threskiornis aethiopicus*, the reincarnation of Thoth, the god of wisdom and knowledge, and a large falcon *Falco* sp. that is the personification of the god Horus, who was the protector of royalty and recurs in bas reliefs from then on (Andreu et al, 1997). There is a spiritual connection between birds and man in Egypt that is paralleled by the Māori, of New Zealand. Chapter 16 details how elders from three tribal groups have shared their *mātaranga* (traditional environmental knowledge) about spiritual guardianship of three native bird species: *kererū* (*Hemiphaga novaezealandiae novaezealandiae*), *oi* (*Pterodroma macroptera gouldi*) and *tūi* (*Puffinus griseus*). The authors show that maintaining the integrity of the spiritual component of *mātaranga* is crucial for cultural sustainability of each tribal group, but also that upholding the *mana* (authority), *mauri* (life force) and *tikanga* (customs and practices) related to a species is fundamental to ensuring its persistence and well-being. On the other side of the globe, and described in Chapter 19, Sault demonstrates how, for the Bribrri of southern Costa Rica, birds do not simply inhabit the landscape – they are beings with knowledge that can benefit people in everyday life, as well as in critical times of change or disaster. The Bribrri, as in many other cultures, also have a responsibility towards the birds in the reciprocal actions that they need to undertake to fulfil their part of the inter-relationship.

In the prehistoric Minoan era (2600 to 1100 BC) some of the earliest depictions of birds were on seals. Around 2000 BC, three doves (Columbidae), ritual objects symbolizing the manifestation of a goddess (Sakellarakis, 2001), appeared as miniature figurines, each perched atop a column of a tri-columnar shrine, also in miniature. Excavations of tombs, villas and caves from 1700 to 1300 BC produced pots and jugs on which stylized birds were painted. Around 1600 BC, individual species of birds are identifiable in frescoes – for example, one from the walls of the Palace of Knossos that shows Chukar, *Alectoris chukar*, a type of partridge, wandering singly or in pairs amongst brightly coloured stones, together with a Hoopoe.

In ancient times the pilgrim to the Borobudur Temple in Java circumambulated the narrow corridors of each level, keeping the main wall always to

his right, tracing a slow but spiritual progress to the summit. Had he the time during his prayers and meditation he would have found numerous depictions of birds. For example, two pigeons (Columbidae) rest on the roof of a house set on pillars. In others, birds, including a hornbill (Bucerotinae) and a pigeon, perch in a tree above seated figures, ducks (Anatidae) fly overhead, and stylized birds are shown about to land in a tree. In all of these depictions, the birds have a naturalistic role: they are part of the environment. In none do birds dominate the scene, but rather add a dimension and indicate the awareness that the sculptors had of different species, their habitats and their relationship with people. These sorts of relationships – the links through birds with the gods, the presence of birds in structures important to religion and life, and their depiction as part of everyday surroundings – are shown in Chapter 11 for Gujarat, India. Between the 7th and the 19th centuries AD, thousands of stepwells were built to provide water in the parched and arid lands of Gujarat. These became a familiar feature of the landscape. While they served a utilitarian purpose of providing life-giving waters, these multi-storeyed stepwells also became a site for women's rites and rituals and the focal point for the worship of local goddesses. Amongst other things, the carvings and images inside the stepwells depict people, divine beings and birds: they portray the sacred universe of the Indians and reveal their understanding of the world of nature.

Birds have 'spoken' through their depictions in art; but there are more direct relationships between birds and language. An example is the stylized passerines that are included in the, as yet, undecipherable hieroglyphs of a clay disc from Phaistos (circa 1700 BC). Using translations from Spanish of 16th-century writers such as Herrera, Oviedo, Sahagún and Hernández in Honduras, Bonra, in Chapter 8, shows that their works reflect the beginnings of melding the distinct traditions of three continents (Latin America, Europe and Africa) into one diverse but coherent body of knowledge about flora and fauna. There are also contemporary studies of birds and language in Chapters 13, 14 and 15. Chapter 13 demonstrates the extensive bird knowledge of the Tlingit people of south-eastern Alaska to whom birds are sustenance, icons and symbols of cultural and environmental identity. Chapter 14 discusses how, despite their distributional and morphological differences, ravens (Corvidae) and herons (Ardeidae) are linked linguistically in the prehistory of Mayan languages of Mesoamerica: descendent words found in Mayan daughter languages spoken in highland areas denote ravens, while the descendent words in daughter languages of lowland areas designate herons. Chapter 15 links the names of locally recognized categories of birds amongst the Nage people of Flores Island, eastern Indonesia, with those in other Central-Malayo-Polynesian languages, considering the kinds of bird species that tend to be named in the same, or related, ways in languages belonging to different language groups; bird names that change little, if at all, through time; and the role of onomatopoeia in the similarity of names.

Birds depicted in geometric shapes and woven in the rich colours of burgundy, brick red, orange, yellow and red ochre are a feature of the shrouds

that have been found in tombs of the Chimú people at Paracas and in other sites in the Peruvian coastal deserts, and date back to the period of 350 BC to 200 AD (Sierlin, 1979). Stylized birds occur, such as parrots, possibly macaws *Ara* spp., and storks on a nest. Also found were feather mosaics made from predominantly brown, red, green and white feathers and in the form of a poncho. Thus, birds were significant and not only a source of inspiration for their textile designs, but also as a source of feathers. Feathers also feature in many ceremonies, being incorporated within the head-dresses of dancers or those of high rank. Greater Rhea feathers are used in South American dances, while feathers of the Blue Crane *Anthropoides paradise* are used in the head-dress of a Zulu prince or king to signal their royal status (Magubane, 1998). In north-western Australia, extending inland to the desert, feather down is used in the head-dresses for dancers who perform at ceremonies. Conical-shaped head-dresses have a plant and human-hair twine base on which is imposed blood and feather down (Berndt and Berndt, 1964). The relationship between feathers and people is explored by Houston for the Huia *Heteralocha acutirostris* (see Chapter 4), and the Scarlet Honeyeater *Myzomela cardinalis* (see Chapter 5). In New Zealand, Māori revered a now extinct bird, the Huia, whose distinctive black-and-white tail feathers could only be worn by chiefs of distinction for special ceremonies or when going into battle. These feathers were stored in specially constructed, and intricately carved, boxes passed from one generation to the next. In Santa Cruz, Solomon Islands, feather currency, in the form of elaborate coils of red feathers from the Scarlet Honeyeater, is the basis of a complex trading network between Santa Cruz and neighbouring islands.

The hunting of birds has appeared as a theme in art works for hundreds of years. An example comes from the Roman mosaics of Tunisia, North Africa. An early third-century mosaic from Le Kef shows 20 Ostriches *Syrathio camelus* being hunted into a netted enclosure, while a fifth-century mosaic from Kelibia depicts different forms of trapping, such as using sticky materials placed on twigs to entrap birds. While some hunting was done for pleasure, most was done to provide food, and the still-life depictions of birds on the mosaic floors of dining rooms indicate those species used for sustenance (Tidemann, 2009). Chapter 6 describes contemporary methods by which waterbirds have been trapped in Central Java, Indonesia, utilized as food for personal use, or sold as food items in the marketplace. The authors also describe the taboos surrounding hunting. Further east, in the Indonesian province of Papua, Pangu-Adam and Noske, in Chapter 7, investigate hunting preferences in relation to the economic benefits for the hunter, suggesting that hunting has shifted from a purely subsistence form towards a more commercial form. Both of these chapters also consider the issues surrounding sustainability.

Many Australian Aboriginal stories involve birds travelling up to the sky and becoming celestial objects, such as the moon and stars. The Adnyamathanha of central-southern Australia have a story of Yurlu, the Red-backed Kingfisher *Haleyon pyrrhopygia*, who travelled south, making fires

that became coal deposits. Yurlu travelled until he came to a mountain range where a special ceremony had commenced. He flew down, snatched a firestick from an Australian Bustard *Ardeotis australis* and flung it up into the air where it turned into Mars, Wildu (Tunbridge 1988). Birds were also assimilated within the supernatural world of ancient India because their essential nature was believed to be celestial and solar. Wild ducks and migratory geese (Anatidae) symbolized souls journeying towards the moon. The crow *Corvus* sp., characterized as garrulous, inquisitive and greedy, was made responsible for transmitting love messages and also for delivering oracles. The cuckoo *Cuculus* sp. awoke amorous desires with its languorous cries. The parrot (Psittacidae), traditional confidant of young lovers, had the power to cure certain diseases, including jaundice, by transferring them magically to another object. And the partridge *Francoelinus* sp. had the reputation of feeding on the rays of the moon (Auboyer, 1965). Birds also have supernatural powers in other cultures. In parts of Africa, for example, Ostrich eggs are kept in houses to protect them against lightning and the Hammerkop *Scopus umbretta*, if harmed, can wreak vengeance on the perpetrator and his property – the hills around the village could melt, his cattle could be hit by an epidemic, lightning may strike the person's house or he may die (del Hoyo et al, 1992).

Birds, and parts of birds, are also known for their healing properties. For example, the fat of the Greater Rhea *Rhea americana* in South America is valued as an antidote to venomous snake bites, while in the Andes, the fat of the flamingo *Phoenicopterus* sp. has been used as a cure for tuberculosis. The horn of the Horned Screamer *Aythya cornuta*, ground into a powder, has also been used as an antidote to the bites of venomous snakes, while, in Argentina, the insides of a Neotropical Cormorant, *Phalacrocorax olivaceus*, spread on the chest, was an antidote for a person suffering from asthma (del Hoyo et al, 1992). The variety of themes and roles of birds is continued in Chapter 18, which describes the significance of the birds to the people of Kenya in their roles in ceremonies, medicine, as messengers, as well as the taboos surrounding certain species. In Chapter 12, Tidemann and Whiteside show that bird stories are a part of the fabric of Aboriginal culture, often indicating expected cultural behaviour, but also account for plumage characteristics, calls, habitat, food, the relationships between Earth and extraterrestrial objects, as well as inter-specific behaviour.

In this age of dwindling ecological resources and loss of land, language and knowledge, it is not sufficient to bask in the warmth of the riches of thousands of years of indigenous knowledge of birds. There needs to be a link with the realities of modern-day research and conservation. More than that, indigenous ecological knowledge needs to be integrated with scientific knowledge for conservation and management. Fraser et al (2006) state that attempts at integration have failed to engage sceptical scientists and the two knowledge systems often operate in parallel, but are seldom integrated. While all the chapters in the book consider issues of conservation, sustainability and management as part of their themes, three include the ideas of indigenous and

scientific knowledge more explicitly. For example, Chapter 9 looks at the possible pitfalls and their solutions during the collection of ethno-ornithological information in Kenya. Chapters 10 and 17 point out the value of indigenous knowledge because of its collection over the long term, in contrast to the more often short-term scientific studies. By surveying traditional ecological knowledge of megapodes in the Solomon Islands and Papua New Guinea and comparing it to scientific ecological knowledge, Chapter 10 attempts to quantify what is 'reliable' traditional knowledge and discusses how the two knowledge systems can be integrated. Chapter 17 looks at how communication between conservationists and indigenous peoples can be facilitated by using the bird knowledge of the Hewa, of Papua New Guinea, to identify the impacts of tradition upon biodiversity in their shaping of the environment by creating a mosaic of habitats of varying diversity. Chapters 20 and 21 demonstrate how the interplay between cultural contexts and biological conservation can inform preservation and conservation. In Chapter 20, Barua and Jepson demonstrate how the cultural popularity of the threatened Great Bittern *Botaurus stellaris* raised its profile and led to its preservation. Jepson, in Chapter 21, examines how understanding the keeping and competing of songbirds in a cultural context (and as assets) could inform the visions and practices of conservation. He concludes that an effective starting point for conservation, in Indonesia at least, is to understand and then amplify local frames relating to birds and allow these the space to generate new conservation governance techniques.

Birds have enriched the lives of humankind for thousands of years. They support life and livelihoods. They are symbols in art, story and dance. They are the conveyors to an afterlife. They have been symbols of war, peace, wisdom, love, evil, hope and luck. They provide moral guidance through stories and contribute to the consequences of misbehaviour and have been used as perpetrators of ideals. For some peoples, the relationship that they have with birds continues to be a guiding principle of life. For others, as science has pushed objective thought, the sense of a holistic relationship with birds may have been lost; but the possibility of a link with alternative bodies of knowledge still exists and is explored in this book. The challenges of embracing ethno-ornithological knowledge and integrating it with Western investigative studies of birds need to be met. If it is not, and those 'other knowledges' are lost, the world of birds and people will be a poorer place.

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2

Ethno-ornithology and Biological Conservation

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Ethno-ornithology has not yet become well integrated within avian conservation. With few exceptions, indigenous and other local and traditional knowledge about birds is not yet integral to the study, management and protection of avifauna carried out by governments and non-governmental groups. This chapter attempts to lay the groundwork for the integration of ethno-ornithology into wildlife management and conservation by first addressing the issue of the adequacy of local and traditional knowledge of ecological and other land management issues, in general, and then showing how ethno-ornithological knowledge is already incorporated within conservation, albeit in a largely unheralded fashion, using examples from Honduras and the US. A discussion of methods for conservation-friendly ethno-ornithology follows; this draws largely on the author's prior work in Honduras. Another section examines a few existing wildlife research and management cases in New Zealand and the Arctic that have incorporated local and traditional knowledge about birds. The chapter concludes with a discussion of the utility of multicultural field guides.