Preface

At the age of six I was tremendously lucky to have a teacher – Mr Govett – who was passionate about both birds and art. He read us Arthur Ransome's *Great Northern?* – a story of adventurous children discovering a breeding pair of vanishingly rare Great Northern Divers in the Outer Hebrides. We were then tasked with illustrating scenes from the story. Knowing that I liked birds – an interest encouraged by my father – Mr Govett asked me to paint the bird itself. I still remember the sense of pride in being selected for this special assignment. Little could he have known how this simple act of encouragement would shape my life.

That experience was reinforced by an extraordinary coincidence. Walking along a desolate beach on the east coast of Scotland a few years later, my father and I came across a Great Northern Diver standing disconsolately on the shoreline. Its crisp black-and-white breeding plumage implied it was in perfect condition, but something was wrong, for it made no attempt to move away. Standing awkwardly, as divers do, the bird looked up at us – pitifully, it seemed – with its blood-red eyes; it was a victim of oil pollution, which at that time was so common in the world's oceans. I could not believe that the bird I had painted in Mr Govett's class was here, right in front of me. There was nothing we could do for the unfortunate creature, and when I looked back as we left the shore, it was being chased into the sea by a dog.

These two events, I now realize, sowed the seeds of my

life, eliciting a passion for birds, a concern for their welfare, a taste for adventure in wild places and an appreciation of enthusiastic, knowledgeable mentors. Several years on, while in Nova Scotia, waiting for a flight into the High Arctic to study seabirds, I lay in bed at night listening to the haunting cries of Great Northern Divers (or Common Loons, as they are known in North America) echoing eerily across the waters of the nearby lakes.

My performance at school was undistinguished, but an interest in natural history – and some lucky breaks – allowed me to turn an obsession with birds into a career. This has been a calling that allowed me to recognize the many ways that people connect with birds, from those who feed pigeons in urban parks, or breed birds in aviaries in their back yards, hunt birds for food or fun, or train racing pigeons like elite athletes, to artists who observe and paint birds in evocative ways. There are myriad ways that we can *know* birds, and that knowledge, whether professional or amateur, scientific or anecdotal, provides us with a deeper understanding of nature itself. The Covid pandemic saw a surge of interest in bird-watching as a physical and psychological escape from the lockdown restrictions. What better evidence is there for the emotional benefits of the natural world, and the need to preserve what's left of it?

There's a widely used phrase in conservation biology – 'the shifting baseline' – which bemoans the fact that the current generation has no appreciation for what the natural environment looked like to previous generations, as their only reference is from their own childhood. A shifting baseline is just as applicable to our relationship with birds.

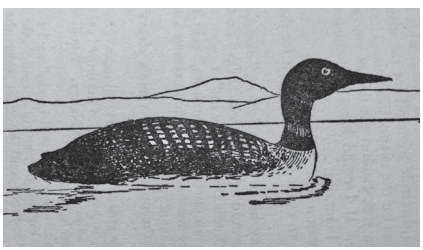
It is all too easy to imagine that our parents' generation shared the same concern about the worldwide decline in bird

numbers, but they didn't. That awareness of a catastrophic decline in many bird populations became apparent only towards the end of the twentieth century. Looking a generation or two further back still, attitudes towards birds were different, with birds more often being seen as a resource, something to be exploited for meat, feathers, study skins and eggs – or simply destroyed because they interfered with human activities.

My aim in this book is to share my enthusiasm for birds and to explain the varied ways that our relationships with them have changed through time. It is a journey that spans several continents and twelve millennia, including my own journey as a bird researcher: from the cave art of our Neolithic ancestors, through the ancient Egyptians' bird-filled catacombs of the Nile valley to ancient Greece and Rome and the beginnings of a written history of birds, through the so-called Dark and Middle Ages and a fanatical obsession with falconry to the beginnings of science and a reappraisal of classical knowledge, to the Faroes and a community that for centuries has depended almost entirely on birds, and then to Darwin and the emergence of objective knowledge. We explore the Victorians' mania for specimens and the accumulation of bodies of ornithological knowledge as science gained traction. The twentieth century brought us to the beginnings of birdwatching and the field study of birds, triggering an extraordinary flowering of knowledge and empathy for them. Today there is massive, worldwide interest in birds, from the casual 'Have you heard a cuckoo yet this spring?' through to the more scientific, in which novel discoveries, such as those driven by new tracking technologies, have allowed us to see the migratory journeys of cuckoos and other birds in real time.

I have combined my passions for science, art and history to direct a spotlight on the multiple ways of engaging with birds. This historical, wide-ranging approach is the outcome of a lifetime of ornithological research and public engagement that has emerged from an enduring fascination about where our love of birds, and nature as a whole, has come from. By drawing attention to the fact that our present, largely empathetic relationship with birds may be temporary, I hope that we may be better able to protect birds into the future.

Our story starts in southern Spain, in a little-known Neolithic rock shelter in Andalusia. Our early ancestors are not especially renowned for depicting birds in either carvings or cave paintings, as those are few and far between, but here in this one shallow cave there are more bird images than all the other known caves put together. It is a place that for me marks, like no other, the genesis of our relationship with birds.



Great Northern (from Ransome, 1947)

1. Of Peculiar Interest: Neolithic Birds

How long have we been enchanted by birds?
Forever it seems.
Graeme Gibson (2005)

I have never seen anything quite like it.

Cueva del Tajo de las Figuras is hardly a cave by archaeological standards, more of a scoop in a vertical sandstone cliff, but inside, it feels as though I'm within the enfolding walls of a womb. With barely enough space to stand upright, the cave spans just four metres from one side to the other and two metres from front to back. I sit awkwardly on a smooth, upward-sloping floor polished by perhaps millions of visitors over millennia, the cave walls just centimetres from my face. It is light – the antithesis of the dark caverns I've been in elsewhere. And in the light I see flocks of birds.

This modest, shallow rock shelter is the deep cradle of Western ornithology: the birthplace of bird study. The walls here are covered with an exuberant Neolithic frieze of over 200 birds. Beautifully depicted, mainly in red ochre, but a few in white and yellow, the curved walls and roof are alive with flamingos, herons, raptors, avocets and many other species, dating back some 8,000 years.

This extraordinary abundance of birds in El Tajo was discovered, or rather announced to the world, in the early 1900s by a birdwatcher, Colonel William Willoughby Verner. The

Willoughby Verner posed and poised for action (courtesy J. Whitaker).

locals, who told Verner of the cave, assumed, as with anything else they didn't understand, that the images were the handiwork of the Moriscos – the Moors – who for seven centuries had occupied this part of Spain.

Multi-talented, Willoughby Verner was a soldier, military historian, natural historian, artist and intrepid adventurer obsessed by birds. Photographs during his heyday in the 1880s show him with a luxuriant moustache, broad-brimmed hat and an abundance of leather straps and belts and loops bearing his hunting paraphernalia, camera and field glasses.

Born in Edinburgh in 1852, Verner was the grown-up version of the archetypal Boy Scout; enthusiastic, energetic and with a keen interest in wildlife. Like many of his generation, however, Verner was a 'sportsman', shooting birds and climbing trees and cliffs to collect their eggs. At twenty-two he joined the Rifle Brigade and was posted to Gibraltar, later seeing active service in Africa in both the Nile Campaign (1884–5) and the Boer War (1899), during which Verner's galloping horse fell and landed on top of him, leaving him horribly injured with a badly broken leg and a displaced heart. Sent back to England, Verner, then aged fifty-two, retired from the army as a colonel in 1904. As soon as he was fit – and he seemed to make a good recovery, albeit with a permanently damaged leg – Verner returned to southern Spain to build himself a house and continue his ornithological pursuits in a region that abounded with bird life.

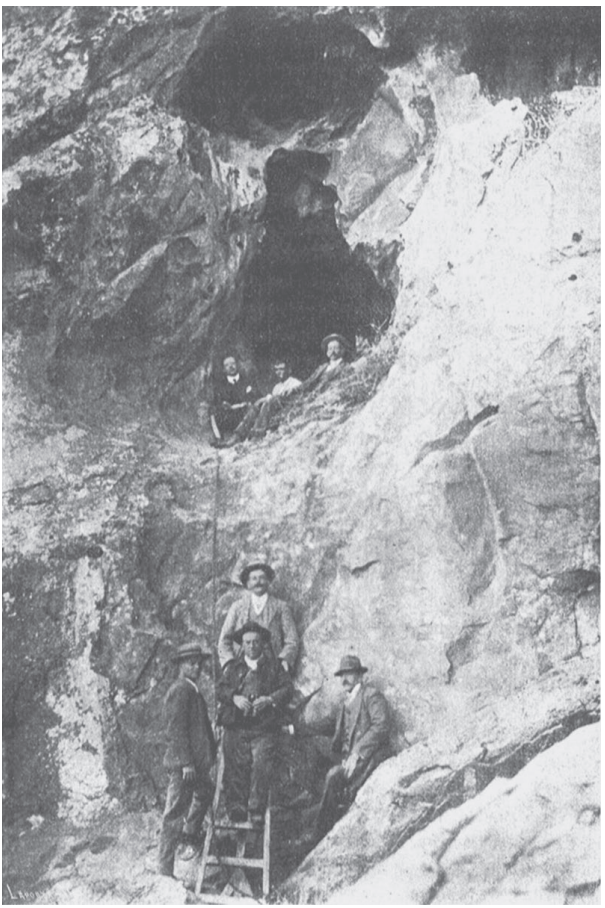
The British had ruled and maintained a garrison on 'The Rock' since the early 1700s. As a result of a trigger-happy officer apparently shooting one of the celebrated apes, a ban on killing Gibraltar's wildlife forced Verner to search further afield for his ornithological trophies. During successive

Gibraltar postings during the 1870s and 1880s, Verner spent his leave travelling on horseback through the south-western corner of Andalusia in search of birds. At this time rural Spain was a challenging and depressing place for travellers. Richard Ford, in his 1845 *Handbook for Travellers in Spain*, warned of cheap inns whose bedroom walls 'are often stained with the marks of nocturnal combat' – of bed bugs, or, as he calls them, 'French ladybirds'. As recently as the 1960s, English travellers in Franco's Spain still struggled with the lack of rural hygiene. Verner avoided the risky hospitality by camping, or by using his own modest hunting lodge near the tiny town of Tahivilla, nestled against his most profitable birding site – the vast wetland known as Laguna de la Janda. His diaries from this time are little more than lists of birds shot and nests robbed. But what lists! The abundance of birds by today's standard is utterly remarkable: huge flocks of Great and Little Bustards, Common Cranes, storks, ibises, herons, hawks, ducks and geese.

In May 1901, while riding along the desolate north-east edges of the La Janda lagoon, Verner's Spanish guide, Eduardo Villalba, pointed up to a large rocky outcrop and told him of the El Tajo rock shelter, and the 'obras de los Moros' (works of Moorish origin) it contained: images of 'stags, wolves and ibex, also of men and women and many other things besides'. Verner's recent injuries, however, prevented him from climbing up to investigate.

Later, he wrote:

> So engrossed was I in my pursuit of the birds, and so little did I know all those years that it was the custom of prehistoric man to make drawings in such localities and, above all, that any such drawings could have endured to this day in



El Tajo de las Figuras, with people unknown, in the early 1900s (from Molina, 1913).

> such open and accessible spots as were very many of the caves, that *I never sought for them!*[11]

Very few people at that time did know about the customs of prehistoric man. In 1910, Verner was told of another cave, further north in the Serranía de Ronda, known now as Cueva de la Pileta (Cave of the Pool), with some curious marks on the walls. This time he and his Spanish travelling companions

decided to take a look. Despite his gammy leg, Verner had himself roped up and lowered into the vertical, bat-infested cave.

Led by José Bullón Lobato, the man who had discovered the cave on his land, Verner was taken aback by the vast network of limestone caverns decorated with animal images and 'mysterious script and symbols on the walls of its inmost recesses where eternal darkness reigns'. Verner's published account of 'his' discovery – in the English magazine the *Saturday Review* in 1911 – caught the eye of the 'pope of prehistory' and world expert on cave art, the irascible and egotistical Abbé Henri Breuil.[2]

On 17 November 1911 Breuil wrote to Verner arranging to meet and visit the Pileta cave together the following year. During that month-long visit Breuil duly verified the ancient – Neolithic – origins of the fish, serpents, horses, ibex, bison and myriad mysterious signs and symbols painted on Pileta's walls. Impressed by Breuil's knowledge and enthusiasm, Verner told him about the paintings he had heard about, but not yet seen, at El Tajo. Breuil was dismissive, doubting that Neolithic images could have survived for so long in such an exposed sandstone site.

Breuil returned to France, and notwithstanding his scepticism, was obviously excited, for as Verner discovered when he went to examine El Tajo for himself in the autumn of 1913, the Abbé had already sent someone to photograph the cave for him. Was it, I wondered, this seemingly underhand gesture that prompted Verner to put pen to paper and prepare his own account of El Tajo for *Country Life* magazine the following year:

> [T]he dull grey and yellow walls, and also the roof of this chamber, are absolutely covered with rude drawings in dull

> red. The most conspicuous are those of stags, the largest being over 2ft in height, with many smaller ones . . . of peculiar interest are the birds, of which a variety are shown, some with webbed feet.

Breuil and Verner subsequently visited El Tajo together, where the Abbé decided that the images were indeed Neolithic. Verner continued:

> This small cave, so awkward to reach and so slippery to enter, was in all probability a 'sanctuary', or place of worship of the folk of the Stone Age, who during their repeated visits to it, wore the rock to its present highly polished state, a condition he [Breuil] assures me he has repeatedly found in his explorations of similar caves in other parts of Spain.

The paintings are of men, deer, dogs, goats, unknown beasts and hundreds of birds. Some of the images are tiny, just a few centimetres high and are so precise and lifelike they must have been painted with a fine brush.

Verner and Breuil found, as did many of the early visitors to such caves, that the images were more easily seen if dabbed with a damp sponge, not realizing that by rendering them more visible in the short term they were helping to destroy their long-term viability. Wetting encouraged the formation of an obscuring layer of calcite and, indeed, when I visited the cave with Cadiz University colleague Dr María Lazarich in the spring of 2019, many of the images were hard to see.

Fortunately, both Verner and Breuil were competent artists and had independently taken care to trace, photograph and reproduce all the images they saw, so we have a remarkably good representation of what those birds and other

animals looked like before they began to fade. I showed María a copy of the coloured painting Breuil had made of El Tajo's walls and asked her what she thought: 'Genio,' she said simply. It was true; Breuil was extremely talented, not just as an artist but in much else besides. María added for good measure that she suspected that he, and possibly Verner too, were spies for their respective countries.

Despite its ornithological significance, El Tajo remains little known, especially compared with Pileta, Altamira or the Dordogne caves, and like many of those, it is not open to the public. Its closure was nothing to do with protecting the paintings, but rather the result of a mother suing the local authorities after her daughter fell while trying to climb to the entrance in 2010. After closing the cave to the public, the local Junta installed a metal ladder to provide safe access for researchers. Looking at the vertical rock wall beneath the entrance to El Tajo, I wondered how Verner with his bad leg and Breuil with his hunched back (he had scoliosis – curvature of the spine) could have climbed up to the entrance, but a photograph in Breuil's account shows them using a ridge pole to gain access.

Both before and after Breuil's comprehensive account of the cave was published in 1929, El Tajo attracted a number of scholars of which María Lazarich and her colleagues are the most recent. Her specific objective has been to identify the birds and understand their significance.[3]

There are no fewer than 208 birds on the walls of the cave. Some 150 have been identified as comprising at least sixteen different species. The truly remarkable thing about these birds is the realism with which they are depicted. They remind me of those on the endpapers of my early Peterson field guide that all birders of my generation will know, but in

Some of the birds in El Tajo de las Figuras as drawn by Abbé Breuil (from Breuil and Burkitt, 1929).

red ochre rather than black, for the El Tajo images are simple, exquisitely drawn silhouettes of birds in profile. Most abundant are the Great Bustards, including a spectacular pageant of adult bustards and several tiny chicks.

It is this part of the cave wall that intrigues me most: several convoys of bustards in single file, one above the other, and in some instances painted on the flat surfaces between protruding ridges of harder rock, as though walking along a sunken path. It seems clear – inasmuch as anything in cave art is clear – that the artist cared only about the conformation of the birds' head and body, for it is these features that shout 'bustard'. The legs, on the other hand, are clunky, stumpy and perfunctory, drawn with two ochre-dipped fingers in a single stroke.

Of all the birds the El Tajo hunters pursued, the male Great Bustard must have been the supreme prize, for at 13kg

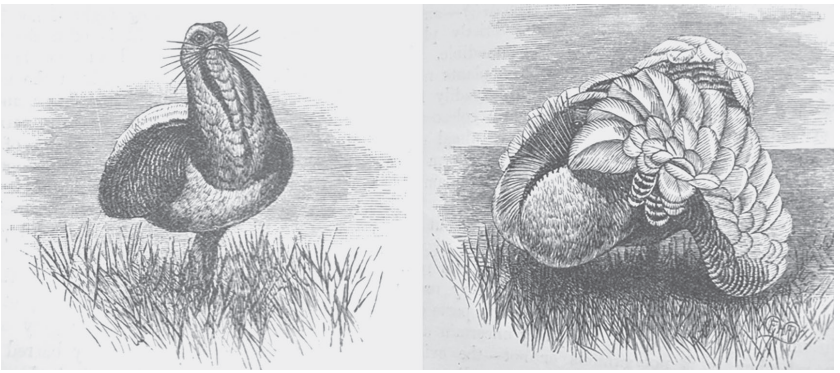
this is among the heaviest of all flying birds. Females weigh considerably less (5kg) – a difference between the sexes that is a consequence of their polygynous mating system. The fact that bustards feature so prominently on the El Tajo walls means that they must have been hunted and eaten, but how the Neolithic hunters caught them on the vast open plains is a mystery.

Across the world, different species of bustards have been considered the 'grandest and most majestic of gamebirds', and many different ways of catching them have been devised, giving us a clue as to how the El Tajo bustards might have been taken. During the hot, dry Andalusian summer, when the birds are desperate for water, one or more archers may have concealed themselves before dawn beside a pool or stream:

> As day begins to dawn, the bustard will take flight in the direction of the [water], alighting at a point some few hundred yards distant. They satisfy themselves that no enemy is about, and then, with cautious, stately step, make for their morning draught . . . as they lower their heads to drink . . . there is no escape.[4]

Another method might – as in India – have involved driving the birds slowly on foot towards an artificial hedge fitted with nooses, where in trying to pass the birds snared themselves.

Verner tells us both the Great Bustard and Little Bustard were abundant in the La Janda area. The former lived in groups consisting of a few old males and several females, or the females with their offspring, just as depicted on El Tajo's walls. Of the Little Bustard he says: 'It is a common sight to see flocks of these birds, varying from a few dozen to over a



A male Great Bustard in different display postures (from Newton, 1869).

hundred manoeuvring high in the air.' And, as he could attest, both species could provide a substantial, palatable meal.

Also on El Tajo's walls are Purple Gallinules with their distinctive long toes, various herons, Cattle Egrets that seem in some cases to be poking around among the deer, a spoonbill, a pair of copulating Common Cranes near a nest with three eggs, a cluster of Greater Flamingos with their characteristic down-curved necks and bent beaks, Glossy Ibis, an avocet, eagles or vultures and ducks – all in a carefully depicted panorama. Most of the birds are represented with uncanny realism, but some are schematic – birds in flight on curved wings, like the squished 'm' of gulls drawn in childhood. And squeezed carefully among the birds and the deer there are mysterious symbols that might be the sun or stars.

There are a few people too: an archer with a bow, a man with an axe in one hand and a bird in the other. There is also a man with a bird-shaped headdress uncannily like the bird hunters of the Indus valley today, who attach a dead heron to their head, allowing them to wade within killing range without disturbing their prey.

Two features – one topographical, one geographical – provide important clues to understanding the bird images in El Tajo. The first is the cave's proximity to what was once one of Spain's great wetlands, Laguna de la Janda – a vast expanse of marsh and open water covering fifty square kilometres in the wet winter months in both Neolithic times and in Verner's day. The second is the cave's proximity to the Straits of Gibraltar – the synapse linking Africa and Europe and the gateway through which millions of migrating birds pass each autumn and spring. The Neolithic people living in this part of Spain enjoyed a massive seasonal abundance of birds.

Laguna de la Janda was drained in the 1960s to create agricultural land. The area is still a birdwatching hotspot, with a wealth of wildfowl, herons, egrets and Glossy Ibis, but a mere shadow of what it must have been previously. The last Great Bustard here died alone in 2006 after several years of failing to attract a partner.[5]

What were the Neolithic people who created the El Tajo bird images like? We know that they used stone tools, made pottery vessels, owned dogs and some domestic animals, and had a long-standing funerary culture, burying their dead in special tombs with artefacts to speed them on their way to the next life. Below the cave towards what would once have been the lake shore there are remains of houses on the level ground, where Neolithic people may have lived, but I suspect that those who visited the La Janda wetland were essentially nomadic and arrived to coincide with, and take advantage of, the great seasonal influx of birds. As is clear from their paintings on the cave walls, these people carried axes and used

bows and arrows to hunt. They almost certainly used throwing sticks to bring down birds in flight, and they probably also made snares and possibly nets to trap birds in the marshes and surrounding plains. But why did they bother to paint these images of birds, deer and other animals?

When the bison paintings in the Altamira cave in northern Spain were first discovered in the mid-1800s, few could imagine that mere 'cavemen' were capable of creating such astonishing works. Instead, it was widely assumed that the paintings were relatively recent, and deliberately designed to mislead. Over the following decades, as more and more cave paintings were discovered across Europe, there was a growing realization that they were truly ancient and people like Abbé Breuil began to take note and ask what, when, how and why?[6]

The 'what' meant describing the art: animals, humans and geometric shapes; the 'when' involved dating the images; and the 'how' is concerned with the way the images were created – usually iron-ore pigments mixed with fat or blood applied with the fingers or sometimes a simple brush. None of these questions, however, is as problematical as the final one: 'why?' Over the years, this has tested the patience and ingenuity of archaeologists almost to the limit.

The way archaeologists have tried to address the 'why' – the purpose – of cave art provides an intriguing comparison with the methods employed by biologists to interpret the behaviours of birds and other animals. The parallels are considerable. Imagine an ornithologist seeing a bird adopt a particular posture, or perform a particular display (such as an aerial murmuration). They then ask themselves: Why did they do that? What is the purpose of that behaviour? In exactly the same way, an archaeologist such as Breuil, looking at the bird paintings in El Tajo or the bison and horses in

Lascaux, would have asked: What was the artist's purpose in creating these images?

The explanations offered by archaeologists for the existence of rock art have – like the colours of a chameleon – changed over time. The first idea, from the late 1800s and early 1900s, was that cave paintings were no more than art for art's sake: decorative and devoid of meaning and reflecting the simple minds of the simple people who created them. Once it was recognized that Palaeolithic and Neolithic people were not the artless, noble savages we once thought, and indeed were cognitively similar to ourselves, this argument was no longer tenable. It was replaced in the early twentieth century by 'totemism' – the veneration of particular animals and crediting them with certain powers. This idea quickly succumbed when it was realized that instead of being dedicated exclusively to particular species, as totemism predicted, most painted caves contained a mixture of animal images.

Totemism in turn was replaced by the idea of 'sympathetic magic', whose roots lay in the early years of the twentieth century. Also known as 'hunting magic', this was the simultaneously utilitarian and magical notion that creating or possessing an image of an animal imbued one with power over it, especially with respect to hunting. This is what Abbé Breuil believed, and were it true, it might represent the beginning of 'man's domination of nature', an idea that later would become a core part of Christian belief.

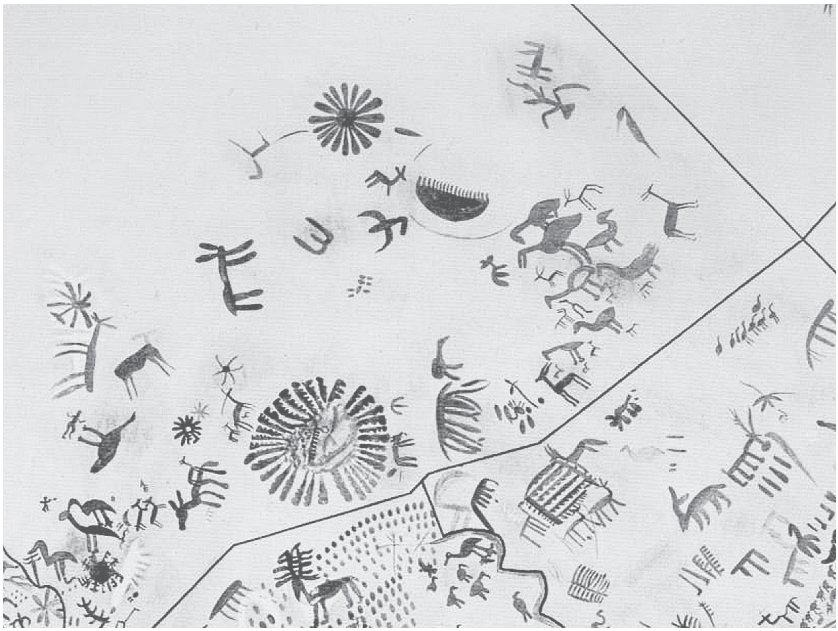
The blow that knocked the spell out of 'sympathetic magic' in the mid-twentieth century was the lack of concordance between the animals illustrated on cave walls and what – based on archaeological remains – the occupants of those caves actually ate.

Once the magic was dispelled, it was replaced in the late

1980s by 'shamanism'. This was an idea informed and elevated by the discipline of neurophysiology, and proposed that cave images were created by shamans whose objective was to use self-induced hallucinations to deal with supernatural phenomena, such as drought (by summoning rain) or sickness (by seeking cures). This hypothesis was devised mainly to explain the otherwise unintelligible geometric shapes that decorate many caves, including Pileta and, to a lesser extent, El Tajo. Such patterns, it was argued, were visual representations of 'entoptic' phenomena – that is, visual effects from within the eye itself – the kinds of things you see during a migraine and – I am told – during altered states of consciousness as a result of taking hallucinogenic drugs. Is it a coincidence that the timing of the shamanistic hypothesis – the 1980s – coincided with an increasingly open drugs culture?

The cave-art aficionado Jean Clottes argues that the similarity of Palaeolithic cave art over much of the northern hemisphere is in line with a widespread shamanism or religiosity. He asserts also that the extraordinary aesthetics and remarkable naturalism of many cave images is consistent with them having been produced by a few highly trained, talented individuals, which, he says, is consistent with a shamanistic or religious interpretation.[7] The sense of awe one experiences on penetrating deep inside a cave to eventually look upon a frieze of bison, horses or woolly rhinoceroses, painted as though they are emerging from the rock itself, is the same as entering a cathedral and viewing a magnificent stained-glass window or an elaborately carved altarpiece.

I was sceptical of the entoptic idea. Not that such visual effects don't occur – we all know they do – but I found it hard to imagine that they might be the inspiration for the



Birds and geometric (entoptic?) symbols in the El Tajo rock shelter (from Breuil and Burkitt, 1929) – the lines are Abbé Breuil's divisions of the cave surface.

geometric symbols found in caves. Then, the night after first seeing the El Tajo paintings, my sleep was a vivid shifting jumble of ochre-red images. A few days later, with the visit still reverberating in my head, I sat in the sun with closed eyes, only to see the entire array of El Tajo's images, both naturalistic and symbolic, come and go inside my eyelids against the sun. I was suddenly aware that entoptic phenomena could be very real, albeit in this case as a result of seeing the art rather than providing its inspiration. I then realized just how easy it was for a burst of euphoria to delude me into thinking I too might be a shaman.

In science, explanations for particular phenomena change over time too, but those changes are usually based on evidence. This hasn't been the case with cave art. There is

increasing evidence of sorts as more and more discoveries are made, but new discoveries do little to help researchers devise rigorous tests of the various hypotheses that have been suggested to explain why cave art was created.

Some archaeologists feel that even trying to identify the purpose in cave art is pointless. I think it might be too, but it is difficult to resist. What is so striking about the El Tajo birds is their lifelike realism: they are depicted as though they are being observed, or hunted, from a distance. Compare and contrast this with seventeenth-century Dutch or Italian paintings of birds laid lifeless upon kitchen slabs. The ability of recent researchers to identify the different bird types in El Tajo is a reflection of just how well observed and rendered they were by their creators.

In some ways, we shouldn't be too surprised by this. The success of Neolithic people depended on their abilities to capture their prey – be it in the flesh or in red ochre. And, unlike most of us today, they lived much more intimately with the natural world. Apart from native hunters, only a few wildlife cameramen or field biologists spend long enough watching wildlife ever to come close to the experiences of our Neolithic ancestors. What the El Tajo artists achieved was more than mere illustration; creating those images forced others to see the birds differently. I wonder how many of today's birdwatchers would be able to create tiny images of particular birds that were instantly recognizable by others? The El Tajo painters didn't sit down and sketch a dead bird, or even a live one. Rather, they had in their mind's eye the true essence of each species that they then transferred onto the cave walls.

Possibly, just possibly, the El Tajo birds served as a field guide. Come here, climb up, carefully, into this shallow rock

shelter and see what's drawn – in vibrant red, yellow and white – upon its walls. Look at them: look hard, at the different types: long necks, short necks, long legs, straight beaks, hooked beaks; see the eggs in the nest on the ground. Now, turn round and look out across the limitless wetland in front of you. Soon, in the spring, the birds will come. They'll come in their thousands, millions even, from the direction of the sea, and we will feast on them. But to hunt them effectively, you need to *know* them, not just the different types shown here, but the way they behave; the way they feed and breed in the marshes. Knowledge here is power.

Of course, bird iconography much older than El Tajo's Neolithic images exists. Both Neanderthals and 'modern' humans in the Palaeolithic exploited birds for food and for body parts – feathers, talons, beaks and bones – for ritual purposes. Palaeolithic people also created images of birds on both portable artefacts and on the walls of caves and rock shelters. But the truth is that Palaeolithic bird images and artefacts are extremely thinly spread through space and time, which is why the abundance of birds in the El Tajo rock shelter is so extraordinary.

These are the most abundant, the most diverse and the most accurately depicted birds in all cave art. They lack the grandeur of some of the better-known cave paintings, but this is partly because the mammoths, lions and aurochs and other Palaeolithic megafauna were extinct by the time the El Tajo people were painting. These wonderful bird images were created on the cusp of the transition from foraging to farming, the western endpoint of the spread of agriculture from the fertile crescent that reached as far south as the Nile valley, around 6500 BC.

Striking similarities exist between southern Spain and Egypt. Both enjoyed vast wetlands – Laguna de la Janda and the River Nile, respectively – that were wonderfully rich in migratory bird life amidst hot summers and inhospitable terrain. The crucial difference was that the annual floodwaters of the Nile poured fertility into the desert sands, allowing the ancient Egyptians to start farming and on a truly grand scale. The agricultural surpluses they generated provided the foundation of a sophisticated society with elaborate beliefs, with – as we will see in the next chapter – birds at their very heart.

2. Inside the Catacombs: The Birds of Ancient Egypt

> Never again will human beings be able to rival the intense involvement with animals that was such an integral part of the ancient Egyptian civilization.
>
> Juliet Clutton-Brock (1989)

Four million is a number I have difficulty imagining. It is eight times as many people as reside in Sheffield, the city where I live. Yet four million is the number of mummified birds – mainly Sacred Ibises – discovered in the vast subterranean catacombs at Tuna el-Gebel in Egypt in the early 1800s. Encased in ceramic jars or wooden coffins, the mummies were stacked metres high in subterranean cells carved from the soft desert rock. And it wasn't just here. Throughout the entire 1,000-kilometre length of the Nile valley from Lake Nasser in the south to Alexandria in the north, archaeologists have found over eighty animal cemeteries, thirty-one of which contain Sacred Ibises. So carefully preserved are the birds that they are still with us now, in *their* afterlife – *our* present. Unwrapped, some of the ibis mummies have the solidity of bronze sculptures, eerily reminiscent of human bog bodies.

The presence of so many bird mummies, together with numerous bird hieroglyphs and exquisite images of birds on tomb walls, reveals a society intimately engaged with birds.

Egypt's civilization was a direct consequence of the Nile.

The river's seasonal floodwaters, together with an ingenious man-made irrigation system, provided an annual dressing of fertile silt to the surrounding desert lands that resulted in prodigious agricultural productivity. The shift from foraging to farming – what archaeologists term the Agricultural Revolution – occurred some 10,000 years ago, and did so independently in different parts of the world and at slightly different times. In Egypt, the shift seems to have occurred about 8000 BC. It was also the shift from nomadism to more settled living, for the cultivation of crops such as wheat forced farmers to live near their fields. Dependency on one or two agricultural plants made farmers vulnerable to the vagaries of the weather – floods and droughts – and it was probably this that bound the Agricultural Revolution to a religious revolution: devotion to gods in exchange for abundant harvests, and sets of shared beliefs that allowed people to work together.

The abundance of agricultural produce, supplemented by the vast number of waterfowl and fish that lived in the marshes, provided the leisure, lifeblood and inspiration for the development of Egypt's elaborate culture. It was a culture in which one's presence on earth was a mere stepping-stone to the afterlife. Benevolent gods were called upon for protection; dangerous gods required appeasement – processes that demanded offerings. During his thirty-one-year reign (1187–1157 BC), the pharaoh Ramses III made offerings to the gods of no fewer than 680,714 birds – some 20,000 per year – at various temples.

During the so-called Late Period of Egyptian civilization, between 672 and 332 BC, animal gods were common, taking a variety of forms, including avian. Indeed, the distinction between human and non-human worlds was extremely

vague. Life after death – eternal life – was a cornerstone of Egyptian culture, hence its preoccupation with the preservation of human bodies through mummification. The poor were buried in the desert sands and desiccated by the Sahara's dry heat. The elite were eviscerated and embalmed in an elaborate process of mummification and deposited in wooden or stone sarcophagi inside beautifully decorated burial chambers.

The Nile was as important a source of sustenance for birds as it was for people: a major migration flyway for birds moving north in spring, south in autumn. Adjacent wetlands provided food and sanctuary for many overwintering birds, just as Laguna de la Janda once did in Spain. From as long ago as 3700 BC it seems, birds have winged their way into every corner of Egyptian culture. They provided food and recreation, but their ability to fly meant that they were revered as the link between heaven and earth – between the present and the future. The mass appearance of migratory birds – ducks, geese, herons, storks, ibises and quail – at particular times of year, were emblems of new life: 'a re-enactment of the moment of creation and the conquest of death'. In a society so taken up with symbols, gods and the afterlife, it is little wonder that birds played such a vital role. As one writer commented, 'All human beings were . . . symbolically imparted with avian characteristics.'[1]

The unique cultural partnership between the ancient Egyptians and birds must have started with their Palaeolithic ancestors exploiting the seasonal influx of birds into the Nile valley as food. The transition from hunter-gatherers to the extraordinarily sophisticated civilization that we think of as 'ancient Egypt' was mediated by an abundance of food and

a settled lifestyle. The Egyptians hunted birds using a variety of techniques including bows and arrows and throwing sticks, as had Palaeolithic and Neolithic people elsewhere. But they also developed much more efficient ways of catching birds.

Egyptian clap-nets were of two general types: a small version for capturing individual birds, with a central perch-trigger, and a larger one for catching multiple birds simultaneously, which comprised two net panels laid flat on the ground and held in position by ropes under tension. On pulling a release rope, the two panels clapped instantly together through 180 degrees, imprisoning any birds that were between them. With birds lured into the trapping area by bait or through the use of decoys, the clap-net was a contrivance of devastating efficiency.

Decoy birds were another novelty. These were tame or tethered individuals that, like the half-bird, half-beautiful-woman sirens of Greek mythology, lured their wild

An Ancient Egyptian clap-net, ready to be pulled and to trap a flock of ducks (from Wilkinson, 1878).

counterparts to their doom. In Egypt decoys were herons, bitterns or geese tied to the prow of a boat, whose presence as it made its way through the marshes attracted or reassured the wild birds, drawing them within killing range.

The remarkable thing about a heron decoy is that it reassures not just its own kind but also other species like ducks and geese. When I first heard of this I was suspicious, but its effectiveness is verified by several others, including the author of a seventeenth-century book on hunting: 'a fowler who wishes to obtain a multitude of waterfowl with a net need only utilize a decoy heron'; and indeed, this method was still in use in the Nile Delta in the 1930s.[2]

We know all this because of the Egyptians' extraordinary artworks: tomb paintings, engravings, sculptures and hieroglyphs. The sheer abundance and diversity of birds that the Egyptians illustrated is extraordinary: they were obsessed by them.

Among the multitude of images, one of the most beautiful is from the tomb-chapel of Nebamun, known as 'Fowling in the Marshes'. Nebamun was an elite official – a grain accountant – at the temple at Karnak who died around 1350 BC. Wheat was the single most important agricultural commodity in the Nile valley, so it is hardly surprising that Nebamun received a special burial and is the proud focus of this scene. He stands, legs astride, on a small boat, holding some decoy birds – possibly egrets – in one hand and a snake-headed throwing-stick in the other, amidst a multitude of exquisitely drawn birds, butterflies and fish. Also in the painting are his beautiful wife and young daughter. The birds

include an immature African Finfoot, various ducks, herons, egrets, geese and a wagtail. At one level you could view this painting as a simple record of a happy hunting day. At another, it has been suggested, this is Nebamun ridding the world of chaos, represented by the explosion of birds rising from the papyrus swamp around him. Most probably, the image simply depicts Nebamun's vision of his afterlife.

The tombs and tomb-chapels of the Egyptian elite were designed and decorated to inspire awe among worshippers, which even in their current decayed and often desecrated

Fowling in the marshes was a recurrent theme in Egyptian tombs from 1300 to 1400 BC. Here we see a hunter (Thutmose?) accompanied by two people presumed to be his wife (on right) and daughter (smallest figure), using a throwing stick to kill birds. Note the decoy duck on the prow of the boat (from Wilkinson, 1878).