



Silke Kipper

The Nightingale

A Legendary Bird and Its Song

With illustrations by Nils Hoff

(Original German title: Die Nachtigall.

Ein legendärer Vogel und sein Gesang)

176 pages, Clothbound

Publication date: 11 April 2022

© Insel Verlag Berlin 2022

Sample translation by Linda L. Gaus

pp. 9 — 16; 36 — 41

**Introduction –
Why the nightingale?**

“Tiuu tiuu tiuu tiuu, Spe tiu zqua. Tio tio tio tio tio tio tio tix. Qutio qutio, Zquo zquo, zquo; Tzü tzü tzü tzü tzü tzi. Quorror tiu zqua pipiqui. Zozozozozozozozozozozo Zirrhading....” And so on and so forth....

The whole night through. That’s how the nightingale sings. In fact, this is approximately how generations of ornithologists (in this case Johann Matthäus Bechstein, 1789) have tried to record the nightingale’s song in writing.

Now fast forward a few centuries. We live in an era in which we believe that quantified data is the measure of all things natural and scientific, and ornithologists who are familiar with the nightingale’s song would sooner describe it like this: “a male’s varied song consists of an average of one hundred eighty different types of phrases. Here, identical phrases are not repeated directly

one after another, but the sequence of the phrases is nevertheless subject to particular principles of order. The phrases, which last approximately four seconds, alternate with breaks of equal length. A phrase usually consists of one variable beginning section and one trill or beat consisting of repeated elements, which frequently ends with a contrasting final element....”

Does this sound any less strange than *Zozozozo Zirrhading*?

To state what is arguably the best news in this book right up front: scientific investigations of the nightingale’s song are by no means exhaustive, nor has anyone managed to demystify it. For the time being, it remains an acoustic object of desire and projection. This is still true for me, although I have devoted all of my scientific efforts toward this song and the nightingale’s love life for the past twenty years. It was the nightingale that made me an enthusiastic natural scientist.

I’m a big-city kid. Our family went to our *dacha* outside of Berlin every weekend, where the forest, field, and lake were right nearby, but this did not inspire a love of true, wild nature. Nature wasn’t wild but was instead organized by people. The fact that the Brandenburg pine monoculture isn’t the best representation of a forest was something I learned only later on as a biology student.

The sparrows and pigeons in the city looked too grubby and neglected to be loved, and my parents, raising us in the child-hygiene-conscious seventies, warned us away from any contact with living or dead birds or parts of them. Even today, despite knowing better, I can’t rid myself of an uneasy feeling when I see children enthusiastically collecting feathers. My relationship to feathered creatures was entirely pragmatic: I could carve a roast chicken and I loved my down comforter, but listening to bird songs or being able to identify them? No way!

When we got older and my parents finally gave in to our desire for a pet, we had a series of cute hamsters, each of whom lived about a month. Finally, there was Bobbie the little parrot, a peach-faced lovebird. They are the so-called “inseparables.” As the name suggests, they are a kind of bird that is extremely social and absolutely must have a partner. Clearly, we didn’t know that. Bobbie was single. He lived for many years but was never tame, and his powerful beak caused bloody wounds when my mother put him in the transport cage. Only later on did I understand that the poor guy was probably the loneliest bird under the sun. He made so much noise that our touchy neighbor in the echoing concrete apartment building complained constantly. And Bobbie didn’t help me understand the melodious sounds of birdsong either.

I don’t know exactly when I developed my personal guidelines for interacting with animals: “just look, don’t touch” and “the animal determines the distance between itself and me.” In any case, these rules of conduct had already established themselves during my biology studies. Sometimes, they exasperated friends who favored boar-bristle brushes or who wanted to feed apes or pet dolphins. Only in my professional life as a biologist did I bite into the sour apple of insight and accept that, among other things, scientific progress sometimes requires touching and approaching.

How, under such conditions, did I become a behavioral biologist? As often happens, this was due to chance. In the first semester of my major studies, the courses that interested me filled up right away – everyone else wanted to take the electron microscopy course and go on the excursion to Tenerife. So the lottery decided, and I landed in a moss classification course and a course about the bioacoustics of the nightingale. While I don’t remember anything at all about the moss classification course, the bioacoustics course stirred something in me. Bioacoustics – exactly what is that again? And I didn’t think I’d ever heard a nightingale, especially not in Berlin!

And that's how the adventure began. Our teacher took us to Berlin's *Teufelsberg*, a man-made hill in Berlin where there was an American listening post during the Cold War, to record nightingale songs. At night, of course. Encounters with wild boars, passengers on night buses, and the security guards at the then-still-intact giant radar facility felt at least as adventurous as Jane Goodall's chimpanzee field research in the jungle. I didn't succumb to the melodic, longing song, but instead to research techniques and an image.

This was supposed to be field research, at night and in the middle of the big city! In my ornithological naiveté, of course, I made all kinds of beginner's errors – for example, when I enthusiastically made a nighttime recording and presented it proudly to Henrike as the “courtship song” of a nightingale. She had explained to us that when there are females present, the males sing in a tenderer and less structured way and that this song had rarely been recorded. My recording, however, was only the song of a robin flying at night. I reflected often on this episode when working with my own students, who wanted to take a ladder when they were looking for nests or who mistakenly made playbacks featuring blackbirds instead of nightingales. Expertise comes only with time! It took many years before a single soft short *click* or *huit* allowed me to reliably detect a nightingale.

The method of recording and analyzing animal noises also enthused me with its sophistication. You didn't have to catch the animals or cut them open. Instead, it worked like this: you held your microphone and recording device up in nature. Or even better: you could just place them there. In the middle of the city! When people don't expect to see something, it often remains wonderfully hidden from view. Later, we loaded the recordings onto a computer and converted them into spectrograms – each noise, each phrase thus became an image with its own unique

aesthetic. Then you could look for patterns, measure the duration and frequency...a data collector's dream!

In the mid-1990s, scientists' newfound ability to digitally "translate" sound into pictures also provided a very visually oriented person like me with access to a research field that is trying to understand the language of animals. I wanted to, and still want to, understand why these little brown birds sing so many different songs. The males can sing about one hundred eighty phrases, and they have to learn all of them. From their fathers or from other males in the vicinity. Initially, what interested me more is what the male nightingales are trying to say with their songs – and to whom precisely. And why the females remain silent but for a few calls.

Anyone who stands in a densely populated area with a microphone and telescope to observe animals gets a big dose of cultural history and human-interest stories for free. Thus, my research was also accompanied by countless auxiliary noises: I had a conversation with a police officer in the park at night about whether he could shoo a nightingale away from his bedroom window and whether that was permitted. By day, the ladies of the neighborhood patrol suspected that our field team was searching for a runaway dog that was off-leash or even observing small children. The (drug) dealers at the entrance to the train station didn't appreciate our vigilance either, but they quickly understood that we weren't watching them through our telescopes. We decided on a peaceful coexistence.

I met a saxophonist from the United States who believed that nightingales communicated with him and his instrument – but why did he have to jam that night with precisely the male with whom we had intended to conduct an individual, custom-tailored playback experiment? The experiment was ruined, the night squandered.

I answered the question of whether there are actually any nightingales in Berlin dozens of times. And I kept discussing why people want to know how animals communicate. Some of these discussions have led me on astonishing tangents. A sociologist was researching how technology sets the tone for our research. And a linguistics working group was excited to learn about the principles we use to name our nightingales and how we apply these names. Research about the research.

All of these episodes illustrate how, in my years with nightingales, knowledge about the idiosyncratic and particular role that their song plays for many people has accumulated. Stimulated by this, I became more and more interested in the history of the nightingale as a “bird of longing.”

And I’m happy when the song season starts up again in the spring. When I’m sitting outside with my colleagues at night in April to hear the first nightingales of the year and record them.

As a scientist, I had the privilege of following for many years the lives of several male nightingales in Berlin’s Treptower Park. Last but not least, I would like to recount some of the experiences for which I have particular nightingales to thank.

I would like to begin with the life story of the nightingale. That will be quick compared to what I have to report about human-nightingale interpretations. Even the naming of this kind of bird took centuries. And in some places, people raved about hearing the nightingale’s song, but they actually heard entirely different birds singing.

So much honor, so much weight would never have been attached to this unassuming brown bird without its “unique selling point”: its song. For whom do the male nightingales sing? And who’s listening? How do they manage to learn almost two hundred phrases? Has evolution gone crazy here? Frequently it’s not just *one* male that sings into the nighttime silence; nightingales

measure each other by their songs in a manner that definitely reminds me of a song contest or a rap battle. And thus we've returned to the human interpretation of animal behavior.

The nightingale was and is a protagonist in folk poetry and generally an object of projection in literature. That which enralls people awakens their desire to possess it – and so I must also talk about nightingale hunting, trade, and taxation. What makes the song of the nightingale so euphonious to the human ear? A plethora of examples demonstrates blithe interpretations of the nightingale's song across many different musical genres, as do the attempts to record its musical quintessence naturally. In the end, the recording of the nightingale's phrases with a system of notes is just as unsatisfactory as trying to put it into linguistic syllables. Alternatively, there have been attempts not to "write down" the nightingale's song, but simply to make it consistently available. Does the nightingale, once caught, sing in its cage? This probably seemed worth an experiment.

When you have arrived at the last chapter of this book, you'll be able to give your eyebrows, whether raised out of astonishment, doubt or sometimes dismay, a rest. Go out the door and try to listen to the little brown bird with the magical song exactly where he belongs. Outdoors, in nature. Even in the middle of the big city if you'd like.

I. Luscinia und Philomele – a Profile

[...]

Family life – Monogamy or Patchwork, Incubation and Offspring

With about five eggs per nest, a pair of nightingales has an average-sized clutch of eggs: from these, approximately four fledged young birds will hatch. Even if it's only the female that sits on the eggs, nightingale fathers do just as much work to feed the youngsters as the mothers do. We discovered this by filming nest visits and registering the birds' comings and goings with radio-wave technology. This works approximately like the alarm systems at the entrances to department stores: a tiny chip on a ring is fastened to the nightingales and a chip reader is placed under the nest. We found out that male nightingales don't participate just a little in feeding the youngsters; they do a great deal. The father feeds the chicks about half the time. However, the percentages vary sharply among males. There are eager fathers and fathers who are sooner reserved. Is this, perhaps, a question of motivation? We couldn't answer that question. Is this, perhaps, a consequence of fate when searching for food? Or do the fathers adjust their own contributions to their female's feeding success or eagerness?

The nightingale is also average when it comes to mating behavior. Even the share of "illegitimate" offspring per nest is, compared to other types of songbirds, in the midrange – as recent research shows. For a long time, people assumed that male and female nightingales partnered up in a manner similar to marriage, at least for one season until the brood is fledged. This view was developed – and copied again and again from research reports – in an era when monogamous marriage was the proper and desired format for cohabiting couples. Thanks to meticulous field research using a combination of different methods, we now know more about some types of songbirds: the "marriage" is a socially purposeful form for the joint raising of

offspring. In the scientific world, this is called “functional monogamy” – because “monogamy” in the narrower sense simply does not apply.

These findings clear up the outdated ornithological perspective from which people – especially men – wanted to put male birds in the leading role in lifetime mating. When people realized that the world of birds doesn’t work like a moralizing picture book, the mating system was renamed the “one-year marriage,” for example by Brehm. If necessary, marriage could be only for a time. Thirty years ago, “monogamous seasonal marriage” was specified as a status in scientific works. Thanks to female researchers’ fresh eye, it is clear that “it’s complicated” would be a better designation. For as we now know, there are plenty of other males who are genetically responsible for some of the offspring due to inconspicuous “illegitimate” mating. And it’s not necessary to imagine females playing a passive role here either.

Even if we don’t know all the details about nightingales, all signs indicate that, as for other types of songbirds that are better researched in this respect, females definitely actively seek out other males and encourage them to mate. The strategies for successful reproduction are not exhausted with the mating decisions either. Various percentages of females also lay eggs in the nests of other females of their kind – a “security egg” in case their own nests fall victim to robbers, storms, or human interventions.

Of course, such behavioral patterns cannot be understood using morality. If instead we look through the Darwinian evolutionary lens of modern behavioral ecology, all of the behavioral strategies make complete sense. The concern is to successfully pass on one’s own genes, as often as possible and across many generations. Furthermore, there are trade-offs; that is, the weighing of the costs and benefits of a particular behavior. Let’s take the case of the male nightingale who has successfully wooed “his” female. If he actually spent so much time

watching over that female to keep potential suitors away from her, he would not be able to eat enough and he would be too weak for the upcoming phase of raising the young. At the same time, he would not be able to defend his territory, where the nest and first eggs might be hidden. The whole breeding attempt could go down the drain! And furthermore, he wouldn't have any time to look around for illegitimate mating options. So there's a lot to be considered.

Practically speaking, evolution has optimized the assessment of these options across many generations, and we assume that the behavioral decisions that we observe reflect the complex calculation of such trade-offs. Thus, the male should endeavor to ensure that he fertilizes as many eggs as possible in his own nest. At the same time, he could distribute his genes to other eggs and nests in order to increase the probability that at least some of his chicks will live through the extremely fragile initial phase of life. And perhaps mixing genes with different females will also contribute to ensuring that at least some of the offspring will develop well. In exchange, however, he must accept that he may raise other males' chicks. The effort required to ensure 100% paternity is simply too great.

For a long time, nothing was known about the percentage of the nightingale's "illegitimate" offspring. We researched a population of nightingales in the *Golmer Luch* near Potsdam and used a method that is well-known from the human sector: paternity determination using DNA samples. Of course the DNA segments that "mark" the nightingale fathers are different than for human beings, but the genetic-technical procedure is very similar. An examination of the paternity of sixty-five potential fathers and more than a hundred chicks demonstrated that approximately one chick in five was not fathered by his social father, that is, the one feeding the nest. Although we certainly believed that there was a certain percentage of illegitimate offspring, this value seemed surprisingly high. If you look at individual nests, there is great

variation: there were definitely nests in which all chicks were the biological offspring of their social father. In almost half the nests, there were one or more illegitimate offspring, but the share was usually smaller than that of the biological offspring. However, there was also one nest where none of the five chicks was fathered by the social father. Usually, the biological father of these “cuckoo’s children” was the nice neighbor next door. In the nest with the five illegitimate chicks, the biological fathers were, for example, the two closest neighbors. And there was something else: we found evidence that it was sooner males that sing more, with greater “complexity,” that were selected by females for illegitimate mating.

Nightingales are a species with strict principles in two respects: they only breed in the spring. Even if the whole nest and all the eggs fall victim to a stray cat, lots of rain, or a soccer ball kicked accidentally into the middle of a field of stinging nettles, the breeding season is over for the whole year. And even if conditions were optimal one year and the chicks left the nest early, in June, there is no second attempt at breeding. The second principle relates to the birds’ annual travel routines. Regardless of the weather, their breeding success, and what happens in the breeding habitat, the birds depart in the late summer! Every nightingale and every year.

[...]