

Alexander F. Skutch

BIRD SONG AND PHILOSOPHY

I first met Charles Hartshorne on July 10, 1961, when he and his wife, Dorothy, arrived at our farm in the Valley of El General in southern Costa Rica. They still looked fresh after a nine-mile ride from the nearest village over a rough road in a four-wheel-drive car, packed to capacity with people and their luggage, that served as a bus. They had arranged by correspondence to spend a few days with us after accompanying a birding tour in neighboring Panama.

Next morning, in the rain forest, I was introduced to Hartshorne's method of studying bird song. On a small tape recorder, he captured the voice of a bird, often one unseen amid dense vegetation. When he played back the recording, the singer, mistaking the reproduction of his own song for that of a rival invading his territory, advanced to meet the intruder, singing more loudly and profusely, often exposing himself to view for positive identification, while Charles made more adequate recordings of the songs for future study. On rainy afternoons, we sat on the porch while he, using a notation that he had developed, studied the voices of a pair of Rufous-breasted Wrens (*Thryothorus rutilus*) singing antiphonally in surrounding trees.

After five days on the farm, we stayed for two nights at an inn situated at an altitude of nearly 10,000 feet on the Cerro de la Muerte in the Cordillera de Talamanca. Here we heard, and Charles recorded, the songs of such high-altitude birds as the Timberline Wren (*Thryorchilus browni*) and the Black-billed Nightingale-Thrush (*Catharus gracilirostris*). Then we continued along the Inter-American Highway to San José to attend the II Congreso Extraordinario Interamericano de Filosofía, where Hartshorne read papers on "Whitehead's Conception of God," and "Whitehead's Theory of Prehension." (The president of this congress was Abelardo Bonilla, vice-president of Costa Rica, and for the week of the congress its acting president, the elected president of the country, Mario Echandi, having temporarily resigned to honor philosophy, and realize briefly the Platonic ideal that philosophers should become heads of states.)

Lewis Edwin Hahn, ed. *The Philosophy of Charles Hartshorne*.
La Salle, Illinois: Open Court, 1991.

After the closure of the congress, we went down to the Inter-American Institute of Agricultural Sciences on the Caribbean slope to hear certain wrens. By recording their song and playing it back, Charles drew Black-throated Wrens (*Thryothorus atrogularis*) to the edges of the dense, lush thickets where they lurked unseen. Once he had two pairs of these wrens dueting simultaneously in plain view. Another Black-throated Wren, who apparently lacked a mate, repeated his lovely songs over and over. As we walked away from these superb musicians, Charles made a characteristic remark about the happy nature of the bird, who sang enchantingly instead of complaining about his solitary state.

Hartshorne's fortnight in Costa Rica was one of the briefer of his many visits to foreign countries, and an example of how he has combined his profession, philosophy, with his life-long avocation, bird study. Before writing *Born to Sing* he had spent more than fifty years reading about singing birds and listening to them in the field in about forty of the United States (including Hawaii), and in Australia, Japan, and India (in each of which he resided as a Fulbright professor). He had made less intensive but usually rather extensive observations in Nepal, England and several other European countries, Middle and South America, Jamaica, Uganda and Kenya, New Zealand, Fiji, the Philippines, Malaya, Hong Kong, and Taiwan—a breadth of field experience that few professional ornithologists can match. Moreover, he had listened to recordings of bird songs from many parts of the world and searched through regional bird books for descriptions of songs. Such was his ample preparation for writing his book.

Born to Sing: An Interpretation and World Survey of Bird Song, a book of 304 pages published in 1973 by Indiana University Press, contains the substance of earlier papers in ornithological and other journals and much more, so that we may regard it as the definitive exposition of his views. To appreciate the wide scope of this book, it should be considered from three aspects: (1) as a contribution to ornithology as a science based upon observation and experimentation, (2) as an essay in aesthetics or musicology as applied to bird song, and (3) as a contribution to the philosophy of nature. Let us take them in this order.

Basic to the scientific study of bird songs is their description in objective terms. The best way to convey to others what a bird sounds like is to play a record or tape-recording; but these are not available for every bird, nor can they be supplied with every book or article about bird songs. At the other extreme from the sensuous experience of hearing a bird song is the sonogram or audiospectrogram, made in a laboratory from a field recording, and indicating by rising and falling lines the frequencies and temporal distribution of all the notes in a complex song. Helpful to the trained investigator, they mean little to

the uninitiated. Before portable t students of bird songs tried to rep vertical, and oblique lines, in a tv the field. The musically educated l by staff notation, like any other n used by people able neither to inte songs, like those of the Rufous- readily suggest brief phrases in on by sequences of syllables, like tl Thrush (*Turdus grayi*) that has bee people appear to hear a bird say e adjectives such as "liquid" or "h be, despite its limitations, the best the character of a bird's song. A methods of describing songs, He body's needs and each has some

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the uninitiated. Before portable tape recorders and sonograms were invented, students of bird songs tried to represent them by diverse systems of horizontal, vertical, and oblique lines, in a two-dimensional notation that could be made in the field. The musically educated found that they could record many birds' songs by staff notation, like any other music, but the verbal description is most often used by people able neither to interpret sonograms nor to read music. Many bird songs, like those of the Rufous-browed Peppershrike (*Cyclarhis gujanensis*) readily suggest brief phrases in one's native language; or they can be paraphrased by sequences of syllables, like the *choy che chee cheer cherit* of the Garden Thrush (*Turdus grayi*) that has been singing in our shade trees. Although no two people appear to hear a bird say exactly the same thing, when accompanied by adjectives such as "liquid" or "harsh," "cheerful" or "melancholy," this may be, despite its limitations, the best way to convey to most people some notion of the character of a bird's song. After explaining and illustrating each of these methods of describing songs, Hartshorne concludes that none satisfies everybody's needs and each has some value.

To carry out his project of selecting the world's best singers, Hartshorne developed a system of assessing their songs by relatively objective physical features. Those that he considered most relevant are (1) loudness or volume, (2) scope or complexity, (3) continuity or length of pauses in a song sequence, (4) tone or musical quality of the sounds composing a song, (5) organization or its coherence and structure, and (6) imitateness, or the tendency to reproduce sounds that the singer has heard, to learn songs by listening to them. Each of these six qualities of a bird's song is rated on a scale of one to nine, giving a possible maximum of 54. Although no bird attains this high degree of perfection, some of the best singers make scores of 47 or 48.

Born to Sing deals principally with the Oscines or Songbirds, that great division of the Passeriform order with the most highly developed vocal organs and, therefore, the finest songs. After specifying the basis of his choice, Hartshorne prepared a world list of superior singers, with scores of 42 or more. It contains 192 species of Oscines, or nearly 5 percent of the approximately 4000 species in this suborder, plus the two suboscine lyrebirds or Australia. Each of the world's major zoogeographical regions contributes its share; but the "sometimes maligned" tropics, with only one third of Earth's land surface, contains about half of its highly musical species. The large families richest in superior singers, with more than 20 percent of their species in the list, are the mockingbirds and thrashers (Mimidae), confined to the New World; the wrens (Troglodytidae), with a single exception also confined to the Western Hemisphere; and the cosmopolitan thrushes (Turdidae), of which 65 of its 307 species (21 percent) are among the elite. The Old World warblers (Sylviidae) contribute 28 species to the distinguished group, but this is only 7 percent of their 398 species.

Families of Songbirds contrast greatly in the development of song. Wrens and tanagers are widespread in the Americas, where in many regions, especially in the tropics, several species of each occur in the same locality. Fourteen of the 59 species of wrens rank among the superior singers, but none of the 223 tanagers (although perhaps, if better known, some would merit inclusion). Why this great difference? Among tanagers are many of the most beautiful of tropical birds. As fruit-eaters who fly to trees and shrubs that, now here, now there, yield abundant crops of berries that are shared with many other birds, tanagers tend to be at most weakly territorial; they have little need of song to proclaim possession of territory. Brightly colored, mostly avoiding dense concealing vegetation, they maintain contact with their companions largely by sight, with a minimum of vocalizations. Many tanagers have no utterance worthy to be called song.

Lacking the bright colors so prominent among tanagers, wrens are often beautiful but never brilliant. The many nonmigratory species of warm lands live throughout the year in pairs or family groups that search for insects and spiders by hopping and flitting through dense foliage and vine tangles where visibility is narrowly restricted. Frequently unable to see each other when only a few yards apart, mates maintain contact by their voices. Often they sing antiphonally, the male often beginning a song that is continued by his partner, the two articulating their phrases so well that unless the listener is between them he seems to hear a single gifted singer. Moreover, wrens tend to be much more strongly territorial than tanagers. The development of song in these two families corresponds to their need of it.

In a wide survey of the relation of habits and habitats to the development of song, Hartshorne found that the most highly endowed singers live in situations and with habits that render visual means inadequate to attract and hold mates and secure territorial privacy. Birds who live in poorly lighted places, amid dense vegetation or near the ground, tend to have better songs than birds who spend more time in sunshine. Birds who glean insects amid concealing foliage, in the manner of Old World warblers, are more songful than aerial flycatchers like swallows. Although visibility is good amid the sparse vegetation of very arid country, meagerness of resources causes birds to be widely spaced, with voices well developed to proclaim their presence to distant neighbors. Solitary birds tend to sing better than the more social or gregarious species. Birds with inconspicuous plumage are more likely to sing well than those brilliantly attired. "The isolated and, at least when feeding, invisible individual is the typical singer, in touch with even one other of his kind only by voice." Although this is generally true, the rule is not without exceptions. Soberly attired Black-headed Brush-Finches (*Atlapetes atricapillus*) and other members of this neotropical genus sing poorly amid dense thickets and dim undergrowth;

Spotted-breasted Orioles (*Icterus (Pheucticus tibialis)*), both handsome crowns of trees.

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A comparison of two birds was learning how much a bird sings. I Thrush, who generously pours forth season from March to June, then for Nightingale-Thrush (*Catharus auricularis*) musical verses less freely, but he hesitate to say which of the two is It would require infinite patience to individual or species throughout difficult for migratory birds, a few winter homes, or while migrating. that birds who sing better sing more a firmer foundation.¹

Although *Born to Sing* deals with to the songs of the "less well-equipped" orders from tinamous to the Passeriform birds, from broadbills "tyrant" flycatchers. To have paid from recordings and published with the songs of so many avian families wherever possible, and made many carefully constructed tables, was a grateful. These tables should help means to travel, to hear the best: analysis of the factors, behavioral of superior song is enlightening. *Sing* a substantial contribution to our of its more controversial, but not for we now turn our attention.

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Spotted-breasted Orioles (*Icterus pectoralis*) and Black-thighed Grosbeaks (*Pheucticus tibialis*), both handsome in yellow and black, sing superbly in open crowns of trees.

Believing that birds who sing better should sing more, Hartshorne attempted to correlate the time a species spends singing with the quality of its songs. He developed a rather elaborate formula to calculate the numbers of hours a bird might devote to effective singing in the course of a year. As he expected, the correlation between song development and effective song season was high; but his data were hardly adequate for the undertaking.

A comparison of two birds who sing around me illustrates the difficulty of learning how much a bird sings. By far the best singer of the two is the Garden Thrush, who generously pours forth his sweetly varied songs during his breeding season from March to June, then falls silent for many months. The Orange-billed Nightingale-Thrush (*Catharus aurantiirostris*) repeats his quaint, short, less musical verses less freely, but he sings through much of the year. I would hesitate to say which of the two sings for more hours during the twelve months. It would require infinite patience to quantify the actual amount of singing of any individual or species throughout a year; and the undertaking would be more difficult for migratory birds, a few of which sing an appreciable amount in their winter homes, or while migrating. I agree with E. A. Armstrong that the thesis that birds who sing better sing more, probable as it appears, needs to be set upon a firmer foundation.¹

Although *Born to Sing* deals chiefly with the Oscines, a chapter is devoted to the songs of the "less well-equipped singers," including birds of the "primitive" orders from tinamous to barbets and woodpeckers, and the suboscine Passeriform birds, from broadbills and woodcreepers to the American or "tyrant" flycatchers. To have painstakingly gathered, directly in the field and from recordings and published writings, such a vast amount of information on the songs of so many avian families, evaluated these songs by objective criteria wherever possible, and made much of this information readily available in carefully constructed tables, was a labor of love for which naturalists should be grateful. These tables should help those who delight in bird song, and have the means to travel, to hear the best singers in their native woods and fields. The analysis of the factors, behavioral and ecological, which favor the development of superior song is enlightening. These features, among others, make *Born to Sing* a substantial contribution to ornithology, the value of which is independent of its more controversial, but not for that reason less important, aspects, to which we now turn our attention.

One must be aesthetically insensitive not to recognize the beauty of bird songs, nor to be emotionally stirred by many of them, especially when heard in their natural settings, where they are most effective. Since many of these songs

can be written in conventional musical notation, we think of them as music. Whether they are correctly so-called is a technical question to which Hartshorne addresses himself in the opening chapters of his book; as a student of aesthetics who wrote that "music is central to my life," he is well equipped for this undertaking. The main theme of his book is "the possible scientific uses of the aesthetic analogy between other animals, especially birds, and man with respect to music." Although the book's factual content is largely in the later chapters, it is underpinning for this main theme.

Order, our author holds, is the vast realm lying between the deadly extremes of chaos and mechanization. Beauty is created by the harmonious integration of diverse items. To be aesthetically satisfying and rank as music, a sequence of sounds must be neither wholly random nor dully repetitious but contain pleasing contrasts. The songs of many birds satisfy this requirement. Avian songs resemble human music in that every simple musical device, including transposition and simultaneous harmony, occurs in them. Perhaps the greatest difference between avian and human music is the brief span of the bird's repeatable patterns, commonly three seconds or less, rarely as much as fifteen seconds, whereas a human composer can develop a motif that lasts an hour.

I believe, with E. A. Armstrong, that Hartshorne, and others, underestimate the mentality of birds.² Their short-term memory, or conscious present, may encompass only a few seconds; but experiments reported by Edwin Boring suggest that man's conscious present is of the same order.³ Birds certainly do not dismiss experiences from their minds as swiftly as is often supposed. Years ago I had a striking demonstration of their retentiveness. In a clearing amid a Panamanian forest, a snake that preys insatiably upon eggs and nestlings, lurking in the grass for a long while, kept a pair of Crimson-backed Tanagers (*Ramphocelus dimidiatus*) from attending their young in a nearby nest. For an hour after I removed the snake, unseen by the parents who flew away as I approached, they continued to peer down into the herbage from which it had vanished, neglecting the cries of their hungry nestlings. They did not promptly forget a distressing experience. And as to the memory that enables many migratory birds to alternate twice yearly between pin-points on the map thousands of miles apart—perhaps a certain nesting tree in Canada and a feeder in Costa Rica—it commands our admiration but baffles our understanding. When we recall that the bird's vital rhythm is more rapid than ours, with much swifter heartbeat, respiration, and metabolism, so that a second must seem longer to it than to us, we may conclude that the songs of the more highly endowed singers are respectably long. A longer, more involved song might defeat the song's purpose of facilitating rapid specific and individual recognition.

In conformity with his basic extremes of chaotic multiplicity sizes the monotony threshold, contrasts, stimulate attention; perhaps if the interval between repetitive span of immediate attention or upon its senses with a freshness.

Singing birds have two methods repeat the same simple song over the song between its repetitions notes, or have a repertoire of different discontinuously; those who sing normally a bird sings freely, perform so monotonously that listener, mate or rival, is duller impaired. By avoiding monotony who, deficient in this sensitivity, succession are chiefly members the Whip-poor-will (*Caprimulgus* together proclaims his name over main interest is something other principle, which I believe Hartshorne to develop, bears importantly upon sensitive.

In the bird's ability to vary repertoire, the number of times a bird repeats an example of a note pervades all nature. These variations external compulsion. Within the free to sing as he pleases, just as to us. But if our choice were in relation to our opportunities, would later regret? Perhaps the bird's sensitivity not determined by factors within dismiss a problem beyond the sensitivity.

Imitiveness, or the capacity home's appraisal of bird song. In of one to nine, he assesses the quality (226), he declares that his principle song the utterance of a bird with others sing. Elsewhere he wrote: