**Mockingbird mimicry.** Here’s another mockingbird you can enjoy. Day after day he sang all day long from an isolated tree in my neighbor’s yard, so one morning I waited in the dark for him to begin (May 18, 2018; Hatfield, Massachusetts; sunrise at 5:26 a.m.). With my parabolic reflector aimed up at him, I recorded three dawn segments, spanning sunrise (♫338, ♫339, ♫340), for a total of 33 minutes. After that, I hoisted a microphone up to his perch and recorded until evening, but provide here only another 27 minutes of his day-long performance (♫341).

Here are some highlights from his performance. In ♫338 he creatively alternates calls of the house sparrow and American robin, then calls of the house sparrow and red-bellied woodpecker (6:13–6:19). How he loves blue jays and Carolina wrens! From two singing sessions (♫338, ♫339), I excerpted all the sounds that sounded like the local Carolina wren and placed them back to back, in ♫342. Overall, how many species do I hear him imitate? About 20. What a remarkable creature!

What more can I learn from the Carolina wren mimicry? I can estimate how many different songs this mockingbird can sing by extrapolating as follows: (1) The wren mimicry comprises 149 seconds (duration of ♫342) out of the 1,573 seconds in ♫338 and ♫339 combined, or 9.5 percent of all the mockingbird’s singing. (2) By studying the sonagrams in Raven Lite, I can identify 9 different Carolina wren imitations, from the 30 to 40 that the male Carolina wren in the neighborhood sings. (3) Dividing 149 seconds by 9 song types, I learn that each of the 9 Carolina wren song types occupies, on average, 16.6 seconds of the mockingbird’s effort. (4) Dividing the total singing time of 1,573 seconds by 16.6 seconds, the estimated number of seconds each song type occupies in the mockingbird’s effort, I get 95, the estimated repertoire of this male mockingbird. You could try estimating this mockingbird’s repertoire based on the stuttered song of the eastern phoebe (occurs three times), the song of the wood thrush (five times), or the song of the northern flicker (six times). If by chance you choose a song that the mockingbird rarely uses, you will overestimate his repertoire size; conversely, choose a favorite song that the mockingbird uses more often than others and you will underestimate the repertoire. The more songs you use the more accurate will be your repertoire estimate.

Detailed notes:

Here are the detailed notes from my marathon recordings of that mockingbird singing in my neighborhood on May 18, 2018. The first three recordings are made with a parabolic reflector as I stood beneath the tree, aiming up at him. After that, I left a stereo shotgun microphone just below his perch, capturing more songs throughout the day (though I provide here only his 27 minutes of singing until 6:34 a.m.).

♫338. 5:06-5:14 a.m. (6:28)

♫339. 5:17-5:37 a.m. (19:45)

♫340. 4:40-5:52 a.m. (11:50)

♫341. Four segments, separated by fades; car traffic is increasing. *Beware*: This recording begins with an actual brown-headed cowbird (flight whistles, and one song), and the mockingbird doesn’t begin until 0:29, with the *dee dee* notes of a chickadee. I couldn’t be sure the cowbird was also there until I saw in Raven Lite that the mockingbird and cowbird overlapped their sounds at 0:43. 5:59-6:34 a.m. (27:20)

♫342. All the sounds from ♫338 and ♫339 that sound like Carolina wrens, all copied here. (2:29)

Play-338

Play-339

Play-340

Play-341

Play-342

For ♫338, I jotted down what I heard as mimicry as I listened, trying to be as thorough as I could:

0:08 Carolina wren (sounds a little like tufted titmouse)

0:10 blue jay

0:16 eastern bluebird

0:27 wood thrush, song A (three examples of song A during this recording; also at 2:02 and 3:28). It turns out this mockingbird seems to have only one wood thrush song.

0:35 killdeer, alternated with a double harsh note of unknown source

0:47 eastern phoebe, stutter song (also at 5:13)

0:57 Carolina wren

1:04 second Carolina wren imitation

1:10 American robin calls

1:12–1:25 European starling, a variety of calls

1:26 Carolina wren

1:33 American robin

1:45 Carolina wren

1:49 American robin

1:51 eastern bluebird calls

1:59 great crested flycatcher

2:01 blue jay, rattle call?

2:02 wood thrush, song A

2:02 northern cardinal, two down-slurred whistles

2:05–2:28 blue jay, three call types

2:18–2:25 red-winged blackbird, two call types

2:27–2:38 American robin, three call types

2:38–2:46 Carolina wren, two song types

2:47 dark-eyed junco calls

2:52 northern flicker song (also at 4:50)

2:58 house wren calls?

3:01 belted kingfisher

3:08 eastern phoebe calls?

3:11 house wren calls?

3:13 red-tailed hawk, or blue jay imitation of hawk?

3:28 wood thrush, song A

3:33–3:37 blue jay, two call types

3:39 red-bellied woodpecker

3:42 Carolina wren

3:49 American robin calls?

3:56 northern flicker, *flicka* calls

4:01 Carolina wren

4:20 Carolina wren

4:21–4:28 killdeer, two call types (also at 5:50)

4:37–4:49 Carolina wren, two song types

4:50 northern flicker song

4:54–5:00 northern cardinal, three song phrase types

5:01–5:12 blue jay, three call types

5:13 eastern phoebe, stutter song

5:36 house sparrow calls?

5:39 American robin calls

5:42–5:50 European starling, two call types

5:50–5:54 killdeer, two call types

5:55 European starling

6:01 Carolina wren

6:09 Carolina wren

6:13 house sparrow and American robin, call types alternated

6:17 red-bellied woodpecker and house sparrow, call types alternated

6:19 red-bellied woodpecker call notes without sparrow

6:23 American robin × wood thrush calls, “hybrids”?

For ♫339, I noted only those songs that, for some reason, intrigued me most:

0:09 wood thrush

0:35 brown-headed cowbird flight whistle is a nearby cowbird; cowbird song later (e.g., at 1:22) is also the cowbird. I can tell it’s not the mockingbird because the cowbird-like sounds overlap those of the mockingbird.

1:39 killdeer, two call types

1:47 northern flicker song

2:36 red-tailed hawk (or imitation of one by jay, which was then mimicked by mockingbird)

4:05–4:21 Carolina wren, three song types

4:31 what is that? House sparrow? Eastern phoebe partial song?

4:47 great crested flycatcher

5:08–5:17 northern cardinal, two song types

5:24 Carolina wren song

5:55 killdeer

6:05 eastern phoebe, stutter song

6:36–6:47 Carolina wren, two song types

7:04–7:35 blue jay, multiple call types (five?), beginning with rattle call of female jay

7:51 eastern bluebird calls

8:57–9:05 Carolina wren, two song types

9:41–10:11 European starling, several call types

10:53–11:04 Carolina wren, two song types

11:24 northern flicker song

12:16 red-tailed hawk (jay?)

12:21 black-capped chickadee, *dee dee dee* call notes (heard for first time here, or did I somehow miss it in previous recording?)

13:03 killdeer, two call types

13:30–13:45 Carolina wren, three song types

14:09–14:17 Carolina wren, two song types

14:45 house sparrow and American robin calls alternated—nice!

14:56 dog! (not imitated by mockingbird, but in the flesh; owner of property tries to calm the dog)

15:57 wood thrush

16:12 eastern bluebird

16:30 northern flicker song

17:11 house sparrow and red-bellied woodpecker calls alternated

17:23 red-tailed hawk, but most likely derived from blue jay, I believe

17:34 an occasional song from an eastern bluebird occurs through here, its presence confirmed by the overlap with the mockingbird

18:36–18:43 Carolina wren, two song types

19:08 northern flicker song

I leave ♫340 and ♫341for you to enjoy all by yourself, in whatever way you choose!