



## A New Song is Spreading Like Wildfire—Among Sparrows

**“It looks like these sparrows may prefer to adopt slightly novel song variants rather than the common song.” – K. Otter**

Many of us bird by ear, i.e., we depend on birdsongs to identify species heard but not seen. Birding by ear assumes that the song males use to defend territory and attract mates remains fairly constant. Males of many species learn their song by listening to other males and perfecting it as they mature. But during this process they sometimes introduce a mistake, creating a variant of the original, an “accent” that spreads regionally and becomes a local “dialect.”

A common example is the white-crowned sparrow (*Zonotrichia leucophrys*). Juvenile males learn to sing by listening to older males in the neighborhood, and they typically breed close to where they were raised. As a result they exhibit regional dialects according to where they breed in the western US and across Canada. These geographical differences remain fairly constant, so much so that different dialects have become associated with five regional subspecies of white-crowned sparrows that also differ slightly in appearance.

But for a close cousin, the white-throated sparrow (*Z. albicollis*), a completely unexpected finding has emerged. Researchers have found that a new song, first sung by white-throated sparrows in western Canada, has rapidly expanded across the country.

In the August 17, 2020 issue of *Current Contents*, a team led by Ken Otter, an ornithologist at the University of Northern British Columbia, Canada, and Scott Ramsay, follow the path of the new song as it spreads from Canada’s westernmost province, British Columbia (B.C.), throughout the country. First observed 20 years ago it has usurped the original and is considered the first example of the cultural advancement of a birdsong across a continent.

In 2000 Ramsey, a behavioral ecologist at Wilfrid Laurier University, Ontario, Canada, noticed that white-throated sparrows in B.C. weren’t singing the typical “Old Sam Peabody, Peabody, Peabody,” he heard back east in Ontario. Instead of ending in three triplets, the new song ended in three doublets, sounding like, “Old Sam Peabuh, Peabuh, Peabuh.”\* Over the next few years he realized the doublet song was moving eastward and he and his team decided to study its progress. Listening to over 1,700 recordings from throughout Canada, the team was able to track its movement.

For example, in 2004 half the recorded males in Alberta, just east of B.C., still sang the old triplet-ending song. By 2014 virtually all the males in Alberta and the more easterly provinces of Saskatchewan and Manitoba had shifted to the new doublet-ending song. The new song continued to sweep across Canada, reaching Ontario by 2015, and the eastern province of Quebec by 2019, a total distance of 3,300 km (2,050 mi.).

The team suspected the unprecedented rapid spread was fueled by eastern and western birds mingling on shared wintering grounds where singing is commonly heard. In 2013 they attached geolocators to male sparrows breeding in Prince George, B.C. and found that the birds migrate to two distinct wintering grounds. One is in coastal California and the other over the Rocky Mountains and into plains states like Kansas and Arkansas where birds from eastern provinces also winter. This strongly suggests that common wintering grounds provide a cultural milieu for eastern birds to hear and adopt the new song, facilitating its spread across the country.

“It looks like these sparrows may prefer to adopt slightly novel song variants rather than the common song. However, it does seem to have to match some kind of template, as you occasionally encounter males singing variants that aren’t doublets or triplets, but these variants don’t seem to catch on. So there must be some constraints as to what they will accept,” said Otter.

It’s not a good idea for males to sing a new song that females may reject. However, in this case it appears that at least for now, females prefer the Texas two-step over the three-step Austrian waltz. But culture can quickly evolve; Otter et al. are already seeing a new variant of the doublet song popping up in B.C.

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\*Both songs can be heard at <https://www.nytimes.com/2020/07/02/science/sparrow-bird-song.html>