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## SIMILARITY OF A TYRANT-FLYCATCHER AND A SILKY-FLYCATCHER: NOT ALL CHARACTER CONVERGENCE IS COMPETITIVE MIMICRY

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The standard example of convergent appearance in birds, Eastern Meadowlarks (*Sturnella magna*) of the New World and Yellow-throated Longclaws (*Macronyx croceus*) of Africa, has been widely used in text-books (for example, R. E. Ricklefs, Ecology, Chiron Press, Newton, Mass., 1973: p. 342). The Crested Black-tyrant (*Knipolegus lophotes*), a tyrant-flycatcher of open scrub and dry areas in eastern South America, is equally convergent to the unrelated Phainopepla (*Phainopepla nitens*) of open scrub and dry areas of western North America, but the resemblance does not seem to have been noted before.

Both species are crested, glossy-black, slender and upright birds with red eyes, with large white patches flashing at the bases of primaries in flight. Both flit from high in one small tree or bush to another in rather open areas, capturing insects in the air at times and eating small fruits at other times. The Black-tyrants I have seen do well in scrubby pastures, in scattered trees around ranch houses, and in semi-open "cerrado" vegetation from Caparaó to Furnas in the eastern part of the state of Minas Gerais, Brazil, but are less common in wetter deforested regions in the state of São Paulo. Small groups, pairs or single birds wander through such areas, much as do Phainopeplas in Arizona. Their mainly highland black relatives, *Knipolegus aterrimus* and *K. cyanirostris*, are progressively less like Phainopeplas.

Since there are few characters to point out in nearly-black birds, the resemblance of *K. lophotes* to *P. nitens* is unlikely to supplant the meadowlark-longclaw example in textbooks. However, the convergence brings up the point that various types of habitat-induced convergences of characters are common phenomena: unrelated grassland birds are often streaked; black and white patterns are common in forest-edge birds; seed-eaters have thick bills and

insect-eaters thin bills, etc. There are also many other types of character convergence, some of them called "mimicry."

Cody (1973. *Ann. Rev. Syst. Ecol.* 4: 189-211), however, restricted the term "character convergence" to one type of convergence in appearance: that seen where different species become more alike in competitively excluding each other in zones of overlap. However, his "character convergence" is not sufficiently unambiguous to describe this type of convergence, which has all the characteristics of the types of character convergence normally called "mimicry." I suggest that what Cody called "character convergence" is best referred to as "convergent character displacement" (Grant, *Biol. J. Linn. Soc. London* 4:39-68, 1972) or, more specifically, as "competitive mimicry." This is in line with previous ornithological use of "aggressive mimicry" (Willis, *Condor* 65: 313-317, 1963) and "social mimicry" (Moynihan, *Evolution* 122: 315-331, 1968). Cody, indeed, compared his phenomenon directly with what otherwise is in danger of becoming "Moynihanian mimicry."

Moynihan and Cody were separately led to use the term "character convergence" in attempts to contrast first social mimicry and then competitive mimicry with "character displacement" (Brown and Wilson, *Syst. Zool.* 5: 48-64, 1956). In character displacement, one or more organisms evolve away from or toward each other in morphological characters in and near a zone of overlap (Grant, 1972). The term is reasonably appropriate and descriptive (though various types of mimicry and the phenomenon of predator-selected aspect diversity also seem character displacement), but divergent character displacement is only one type of "character divergence"—which includes simple adaptive radiation in allopatry or otherwise. Character convergence, being more or less the opposite of character divergence, should not be used as the opposite of "character displacement." Grant (1972) used "character release" instead, a reasonable suggestion.

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