

# Sex role similarity and sexual selection predict male and female song elaboration and dimorphism in fairy-wrens

Karan Odom<sup>1</sup>, Kristal Cain<sup>2</sup>, Michelle Hall<sup>3</sup>, Naomi Langmore<sup>4</sup>, Raoul Mulder<sup>3</sup>, Sonia Kleindorfer<sup>5</sup>, Jordan Karubian<sup>6</sup>, Lyanne Brouwer<sup>7</sup>, Erik Enbody<sup>6</sup>, John Jones<sup>6</sup>, Jenelle Dowling<sup>8</sup>, Ana Leitão<sup>3</sup>, Emma Greig<sup>9</sup>, Christine Evans<sup>10</sup>, Allison Johnson<sup>11</sup>, Kimberley Meyers<sup>12</sup>, Marcelo Araya-Salas<sup>13</sup>, and Michael Webster<sup>14</sup>

<sup>1</sup>University of Maryland at College Park

<sup>2</sup>The University of Auckland

<sup>3</sup>University of Melbourne

<sup>4</sup>Australian National University

<sup>5</sup>Flinders University of South Australia

<sup>6</sup>Tulane University

<sup>7</sup>Netherlands Institute of Ecology (NIOO-KNAW)

<sup>8</sup>University of Montana

<sup>9</sup>Cornell University

<sup>10</sup>Flinders University

<sup>11</sup>University of Nebraska-Lincoln School of Biological Sciences

<sup>12</sup>University of Melbourne School of BioSciences

<sup>13</sup>University of Costa Rica

<sup>14</sup>Cornell University College of Agriculture and Life Sciences

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## Abstract

Historically, bird song complexity was thought to evolve primarily through sexual selection on males, yet in many species both sexes sing. Previous research suggests competition for mates and resources during short, synchronous breeding seasons leads to more elaborate male songs at high latitudes. In contrast, we expect male-female song dimorphism and elaboration to be more similar at lower latitudes because longer breeding seasons and year-round territoriality yield similar social selection pressures in both sexes. However, studies seldom take both selective pressures and sexes into account. We examined song elaboration and sexual dimorphism in 15 populations of nine fairy-wren species (Maluridae), a Southern Hemisphere clade with female song. We compared song elaboration and sexual song dimorphism to latitude and life history variables tied to sexual and social selection pressures and sex roles. Our results suggest that song elaboration evolved in part due to sexual competition in males: male song variability was more positively correlated with temperate breeding and greater breeding synchrony than female song. We also found strong evidence that sex-role similarity contributed to male-female song similarity: male and female songs were shorter and more similar when parental care was more equal and when male survival was high. Contrary to Northern Hemisphere latitudinal patterns, songs were less dimorphic at higher, temperate latitudes. These results suggest that selection on song can be sex-specific, with male song elaboration favored in contexts coincident with sexual selection. However, selection pressures associated with sex-role similarity also appear to constrain sex specific song evolution and song dimorphism.

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