

WHO BITES BACK?

Structural size is associated with biting during handling in Red-eyed Vireos

A retrospective analysis spanning 2000–2024

Aanya Koti and Paul A. Callo Department of Biology Mary Baldwin University



A 25-calendar-year archive

635 captures from 591 birds across 18 sampled years. The primary model used 375 first encounters with complete morphology.

635

capture records

591

individual birds

18

sampled years

375

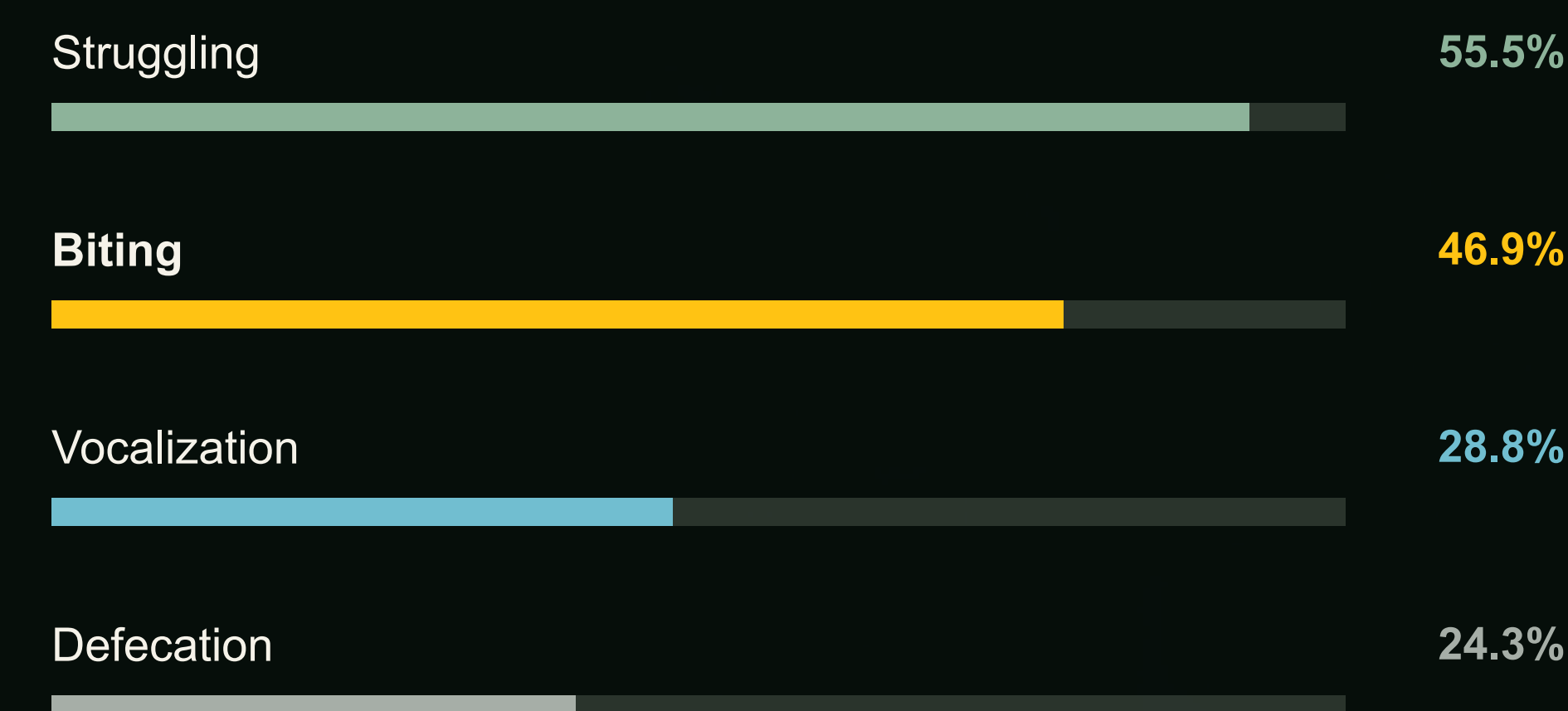
complete cases

The question

Do defensive responses track structural size, mass relative to size, or a consistent individual response?

What handlers recorded

Primary complete-case cohort n = 375

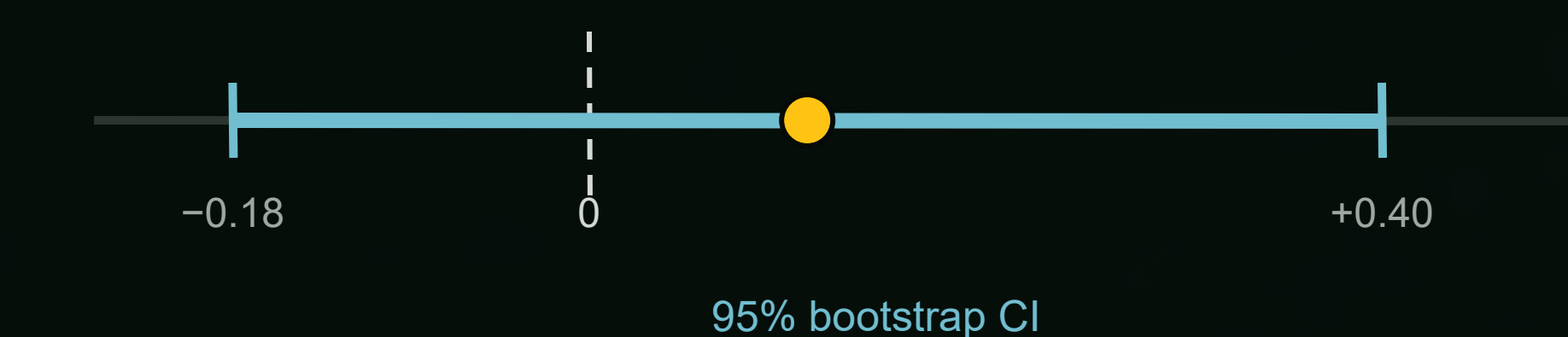


A bird could contribute to more than one recorded behavior.

Repeat captures

Among 40 recaptured birds

$\kappa = 0.11$ weak first-to-second agreement



The interval crossed zero. These records did not establish stable individual biting responses.

ONE SIZE SCORE, THREE MEASUREMENTS

PC1 loadings show each measurement's contribution to structural size.

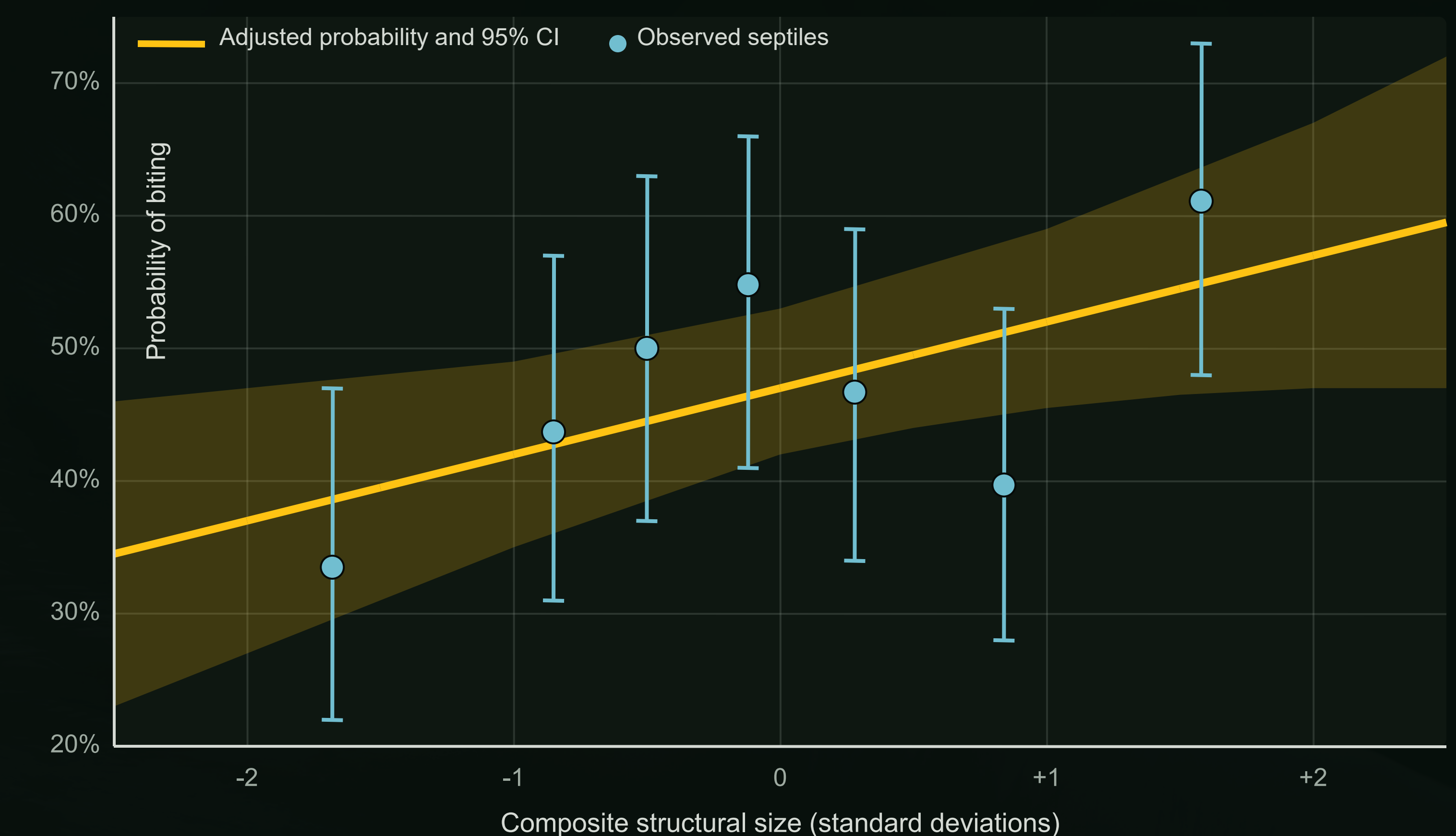
CULMEN
0.395

WING CHORD
0.641

TARSUS
0.658

Biting probability increased with structural size

OR 1.26 per SD 95% CI 1.01–1.56 p = 0.038



37%

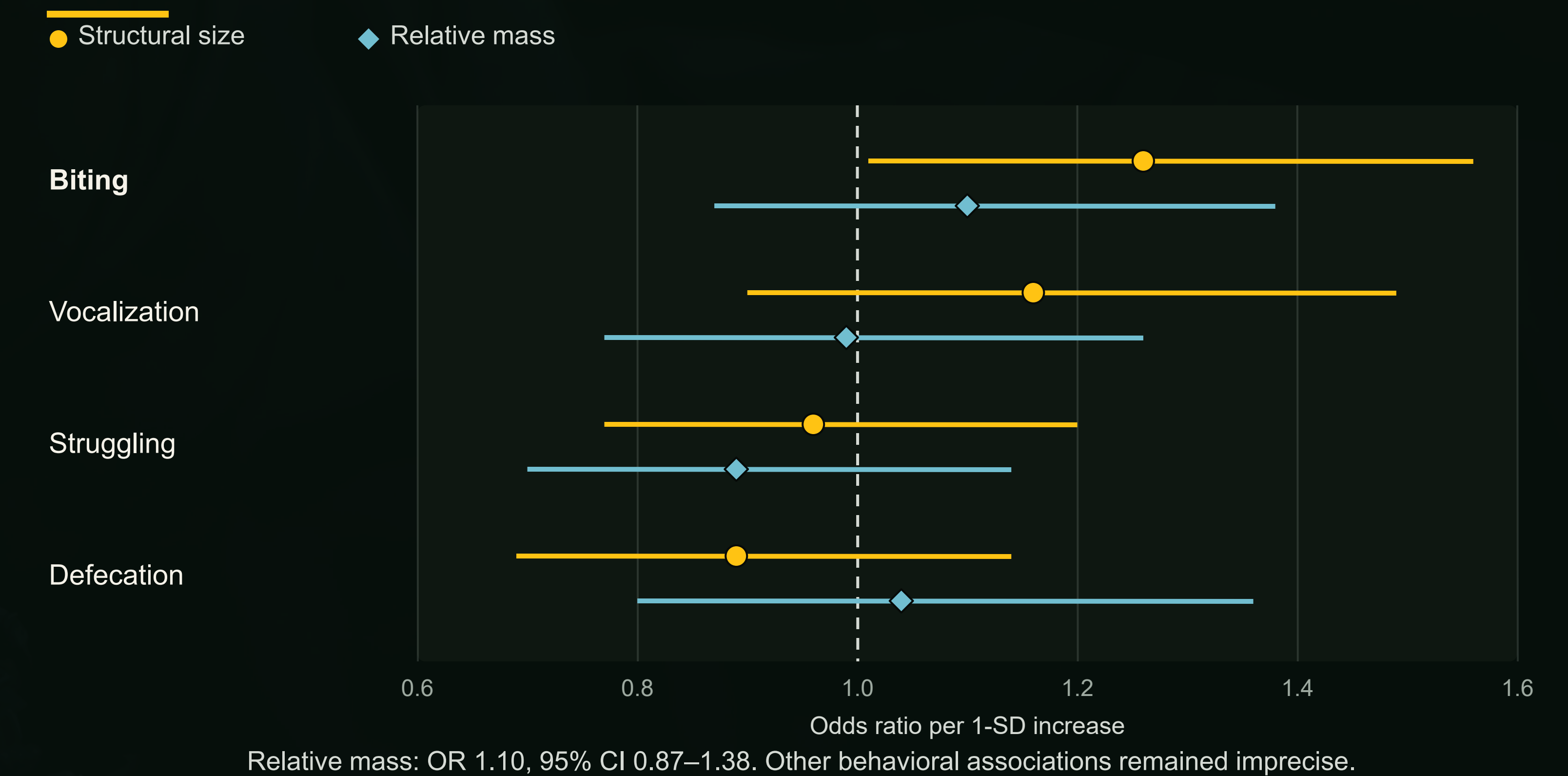
at -2 SD

modeled contrast

57%

at +2 SD

The size association was specific to biting



LARGER BIRDS WERE MORE LIKELY TO BITE

INTERPRETATION

Greater size may provide more reach or leverage during restraint. The mechanism remains untested.

NEXT STUDY

Use a fixed ethogram with handler and timing metadata. Repeat measures within birds to estimate consistency.

DATA, CODE,
AND METHODS

PLACE
QR CODE
HERE

