

# Birds, bees and other critters have scruples, and for good reason

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Tailorbirds gather leaf edges, plant fibers and spiderwebs to construct a sturdy nest. Credit: University of California - Berkeley

Humans are not the only species to show a strong work ethic and scruples. UC Berkeley researchers have found evidence of conscientiousness in insects, reptiles, birds, fish and other critters.

In reviewing nearly 4,000 animal behavior studies, UC Berkeley psychologists Mikel Delgado and Frank Sulloway tracked such attributes as industriousness, neatness, tenacity, cautiousness and self-discipline across a broad range of creatures great and small.

Just as in humans, conscientiousness in [animals](#) – which includes working hard, paying attention to detail and striving to do the right thing – has such evolutionary benefits as giving them an edge in hunting and gathering, attracting mates, procreating and fending off predators, according to the review published in the online issue of the journal *Psychological Bulletin*.

"Honeybees who are more likely to remove bee carcasses from their hive have more offspring, and birds who keep their nests tidier are less susceptible to being preyed on," said Delgado, a UC Berkeley doctoral student in psychology. "Also, for many bird species, mastering song is key to mating success."

And, "in some [bird species](#), females carefully inspect the display nests that are built by males," she added. "Those males that build the best display nests and that have chosen nesting sites that are well hidden from predators, are more likely to be selected as mates."

Delgado and Sulloway divided the conscientious characteristics they found in animals into two main categories: "order and Industriousness," which includes organization and cleanliness, and "achievement striving and competence," which covers mastery and deliberation.

Birds and insects tended to fit into the orderliness category, whereas primates and other mammals fit more squarely into the achievement striving box.

Moreover, researchers said, this split is reflected in the "phylogenetic"

family tree in which primates and other mammals branched off from [birds](#), reptiles, invertebrates and other species as their personality traits evolved to help them adapt to differing life conditions.

"Orderly and industrious tendencies appear to have originated in insects and fish, whereas achievement striving and competence may be more closely related to problem-solving, group living, and the complexity of the environment that those animals inhabit," Delgado said.

Among other tools, researchers tracked animal characteristics using the "Big Five" model, which breaks down personality into the five overarching categories of openness, conscientiousness, extraversion, agreeableness and neuroticism.

While previous research has identified openness, extraversion, agreeableness and neuroticism in animals, this is the first time conscientiousness has been recognized throughout the animal kingdom.

That's because previous research defined conscientiousness too narrowly as a human trait based on emotions, intentions and morality, Delgado said.

"We argue for using a more behaviorally based approach in assessing animal personality in future research," Delgado said.

**More information:** Mikel M. Delgado et al. Attributes of Conscientiousness Throughout the Animal Kingdom: An Empirical and Evolutionary Overview., *Psychological Bulletin* (2017). [DOI: 10.1037/bul0000107](https://doi.org/10.1037/bul0000107)

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