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An individuals-oriented approach to conservation

Commentary on [Owens et al.](#) on *Wildlife Personality*

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Abstract: Individual cognitive and emotional differences in personality among animals, along with differences in their behavioral traits, are increasingly important in conservation efforts. Incorporating these differences requires conservation to leave behind its exclusively collectivist approach for one that considers both the collective and the individual – an approach that is both more effective and more ethical.

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Introduction: Traditional conservation science often treats animals as interchangeable units within a population, focusing on species-level interventions. However, growing evidence shows that individual animals exhibit consistent behavioral differences, known as animal personality traits, which can influence community dynamics and ecosystem functions significantly (Bell et al., 2009; Wolf & Weissing, 2012; Hunter et al., 2022; Sommer & Schmitz, 2020). Variations in traits like boldness or aggression can influence an animal’s role in food webs and ecological processes. As the importance of animal personality in ecosystems becomes clearer, it needs to be integrated into conservation practices (Collins et al., 2023).

1. A shift toward individual-oriented conservation leads to better outcomes: Individual-oriented approaches with traditional collective strategies can enhance conservation efforts. By targeting specific animals (e.g., bold predators prone to human encounters) based on their unique traits, conservationists can customize interventions like behavioral training or GPS tracking (Sommer & Ferraro, 2022; Melzheimer et al., 2020). In rewilding, assessing the personalities of introduced and existing animals can help anticipate potential conflicts and facilitate measures to improve the chances of coexistence. Individual-based conservation also emphasizes animal agency, recognizing animals as active decision-makers, capable of adapting to new contexts (Edelblutte et al., 2023). Understanding these behaviors makes more precise interventions possible, especially in reducing human-wildlife conflicts (Orrick et al., 2024). Currently most examples of individual-oriented approaches in conservation are limited and focus primarily on large vertebrates (Collins et al., 2022). Developing creative tools and methods, conservationists can extend their efforts to a wide range of species (Orrick et al., 2024).

2. A shift toward individual-oriented conservation leads to more ethical outcomes: In traditional conservation animals are often viewed as interchangeable units within a population (Ferraro et al., 2023). Yet, as the target article points out, to avoid unethical practices conservation goals need to be aligned with the intrinsic value of individual wildlife (Owens et al., 2024). The individual-oriented approach to conservation, taking animal personality into account, aligns with

the growing recognition of animal sentience and the intrinsic value of individual animals (Wallach et al., 2018; Ferraro et al., 2023). This allows for interventions to be tailored to consider each animal's health, behavior, and ecological role, so as to ensure that conservation strategies are not only effective but humane. In valuing animals as unique beings, individual-oriented conservation can promote the welfare and well-being of all involved.

3. A brief note on animal personality and sentience: Some of the commentators on the target article note that animal personality, as defined, does not necessarily require sentience (Briffa, 2024; Sommer, 2024). This underscores the bias toward large vertebrates, often assumed to be sentient, in cognition and conservation studies, including those discussed by Owens et al. However, as our understanding of animal cognition expands, so does the recognition of sentience across a broader range of species, including many invertebrates (Gibbons et al., 2022). It is important to remain open-minded as this knowledge evolves.

4. 'Personality' needs to be distinguished from 'consistent individual differences': Animal personality is commonly defined as "consistent individual differences in behavior" (Briffa & Weiss, 2010). In humans, however, personality is seen as an underlying characteristic that influences behavior and involves deeper cognitive and emotional processes. Whereas in human psychology "personality" covers more than observable actions, animal personality is often treated more superficially (Ferraro et al., 2023). In behavioral ecology, "animal personality" is often a shorthand for studying consistent traits rather than underlying cognitive experiences. This disparity between our understanding of personality in humans and in non-human animals suggests that we need to revisit and expand our definition of animal personality. A more nuanced approach could lead to better interpretations of animal behavior, recognizing the potential cognitive and emotional factors at play. Such an understanding would allow more individualized and effective conservation interventions that respect the rich, complex lives of animals (Bekoff, 2024).

5. What's next for integrating animal behavior into conservation? Although animal personality is still underutilized in conservation, interest is growing, particularly in areas like climate change, captive breeding, and reintroduction (Collins et al., 2023). In fields like wildlife disease management, human-wildlife conflict, and reserve design, however, personality is still underrepresented. The focus thus far has been largely on the "Big 5" personality traits—boldness, exploration, aggressiveness, sociability, and activity—because they are observable and because of their impact on interactions with the environment (Réale et al., 2007). This may stem from the current, limited definition of animal personality. Animals have a broad range of personalities *and* behavioral traits that can change adaptively across time. Applying critical anthropomorphism—carefully attributing human-like traits to animals based on scientific observation—can improve our understanding of animal personalities across populations (Ferraro et al., 2023).

Summary: There are still challenges to incorporating animal personality variables into conservation practice, including extending the definition of animal personality and expanding research beyond large mammals (Blumstein, 2024; Sommer, 2024; Vonk, 2024). Integrating animal personality traits and individual-oriented approaches into conservation schemes will make them more successful and ethical. This also aligns with the growing recognition of animal sentience and the ethical imperative to value animals as unique individuals rather than mere representatives of their species.

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