

## *Editorial*

# Why (and how) personalities in invertebrates?

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The literature on animal personalities is varied and sometimes fragmented, with different terms for the individual differences that have been found. Everyone agrees that these differences are important (Groothuis and Carere, 2005) but not everyone agrees how to define them. Defining differences by a multidimensional assessment of these variations, similar to that used for human personality assessment (Gosling, 2001), taps into the complexity of these variations, see Mather and Anderson (1993) for octopuses. A different approach has been to decide on a dimension of behavior and to look at its correlation and trade-offs across different situations (Sih et al., 2004). Gherardi et al.'s (this collection) review suggests that behavioral syndromes are larger, as they demand multiple contexts. But a thorough student of personality will evaluate behavior across time and contexts, find several personality dimensions, and only then use the most important one for each animal. Pinter-Wollman (this collection) focuses on activity and Pruitt and Reichert (this collection) on aggression. But another difference is that personality is assumed to be a fundamental part of the nature of the animal, whereas a behavioral syndrome is just similar locations on a dimension occurring in several contexts.

In addition to different terms, personality is studied in varied situations. Within this collection, Gherardi et al. evaluate decapods crustaceans to find out why so little research has been done on them. Pruitt and Reichert look at the ecological consequences of behavioral syndromes in spiders, including mechanisms for maintaining variation within and among populations. Pinter-Wollman generates hypotheses for how the person-

ality distribution of individuals in social insect colonies can generate colony personalities. And Mather et al. look at variation in food choices in octopuses and suggest that these differences might be caused by personalities, with the intervening variable of exploration. The only common thread running through the four accounts is individual variation in behavior.

This underlines the magnitude of the task of understanding invertebrate personalities. Invertebrates make up 98% of the animals on the planet and their diversity is immense. Invertebrates have vastly different physiologies, hugely different life histories and socializations shape them, and yet individual differences in behavior are found everywhere we look. Those groups we have evaluated for personality have the most complex nervous systems and behavior. Will simpler invertebrates show the same complexity of individual differences? Will personality differences last across different life history contexts and stages? Is the construct of personality (Gosling, 2001) strong enough to stand up to this variation? Only time and more investigation will tell us.

## References

- Gosling SD, 2001. From mice to men: What can we learn about personality from animal research? *Psychol. Bull.* 127: 45–86.
- Groothuis TGG, Carere C, 2005. Avian personalities: Characterization and epigenesis. *Neurosci. Biobehav. Rev.* 29: 137–150.
- Mather JA, Anderson RC, 1993. Personalities of octopuses *Octopus rubescens*. *J. Comp. Psychol.* 107: 336–340.
- Sih A, Bell AM, Johnson, JC, 2004. Behavioural syndromes: an ecological and evolutionary overview. *Q. Rev. Biol.* 79: 241–277.