

Animal personalities - an empty placeholder feigning understanding

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The time is ripe for analyzing where the misgivings come from that researchers have after attending 'personality' sessions at behavior conferences or reading papers in behavior and ecology journals that seem to attract excitement, because of the label 'personality'. Beekman & Jordan (2017) point out that 'animal personality' studies is nothing more than a re-branding of existing fields of research, fields that are far more solidly grounded and hypothesis driven than the often vague and superficial focus on animal personalities.

They go on to state that there has been a rapid increase of mainly descriptive papers pointing to correlations and measuring behavioral repeatability with little attempt to link observed behaviors to evolutionary theory. “This latter approach was met with bemusement among many in the field of behavioral ecology” including the present authors. The field may have profited from the ‘Bystander’s Dilemma’ (Darley & Latané 1968), meaning that if someone needs to do something, here criticize, the greater the number of bystanders, the less likely it is that any one of them will criticize. However, somewhat surprisingly, as we took a similar initiative (Jungwirth et al. submitted), there are now two independent critical reviews of animal personality research written by outsiders to the field. Importantly, Jordan & Beekman criticize points very similar to the ones we raise, despite all of us having different scientific backgrounds. We may diverge in the emphases we place on various points, but overall we agree that it is difficult to see how and where the animal personality approach has advanced our understanding of behavior, ecology, and evolution.

The fact that two independent papers articulate very similar criticisms is a message in itself. We describe the same criticisms but use metaphors different from the ones Beekman and Jordan use. For example, we compare the use of the term ‘personality’ to how the term ‘motivation’ was used in classical ethology: as an apparent explanation for observed behavior, only to later become superfluous, once the actual mechanistic explanation for the observed patterns was found. To us, ‘personality’ is thus a ‘black box’ that is merely a placeholder but in itself does not advance our understanding. Beekman & Jordan call it “a marketing exercise, especially if its use adds nothing to our

understanding”. Both papers give examples of fields that are directly concerned with understanding both the proximate and ultimate mechanisms underlying variation in behavior, such as life-history theory, foraging theory, genetics, game theory, Red-Queen dynamics, behavioral endocrinology, etc.

Many animals are infected by parasites that drain energy from their host but also manipulate host behavior to their own advantage. What is gained by labeling an infected individual ‘bold’ or ‘shy’ if we suspect or already predicted and experimentally examined whether, when and in which direction a parasite should and does manipulate behavior? The functional approach of behavioral ecology should not be abandoned by calling the resulting host behavioral phenotypes ‘personalities’.

The current methodology utilized in animal personality research is such that most studies cannot exclude that observed consistent variation is due to intrinsic factors such as parasite infection, a broken toe or just random noise around an adaptive mean. We surveyed all papers published in 2015 in 10 influential journals in the fields of behavior, ecology, and evolution (Jungwirth et al. submitted). For studies categorized as being concerned with animal personality research, we conducted a detailed analysis of their methodology. This examination revealed that personality studies applied on average few behavioral tests, often repeat them only once, and generally last for only a very short time. How does such research advance our understanding of animal behavior?

Krebs & Davies wrote in their “Introduction to Behavioural Ecology” (1981): “This book

is about the survival value of behavior. We call this subject ‘behavioural ecology’ because the way in which behaviour contributes to survival and reproduction depends on ecology.” This implicit research agenda allowed for predicting adaptive behavior and thus for hypothesis driven research. There is no need for returning to descriptive research generating black boxes. As Beekman & Jordan put it: “let us please resume discussion of variation and consistency of behavior in the context of behavioral ecology, and abandon the concept and terminology of animal personality entirely.” We completely agree.

References

Beekman & Jordan A. 2017. Does the field of animal personality provide any new insights for behavioral ecology? *Behavioral Ecology*

Darley JM, Latané B. 1968). [*Bystander intervention in emergencies: Diffusion of responsibility. Journal of Personality and Social Psychology. 8: 377–383.*](#)
[doi:10.1037/h0025589](#)

Jungwirth A, Wedell N, Milinski M, Bshary R. (submitted). What has animal personality research ever done for us?