Consistent individual differences in boldness of an African cichlid fish (Pseudocrenilabrus multicolor).

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Changes in animal behavior often represent the first response for animals coping with human-induced, rapid environmental change. Yet recent research in animal behavior has shown that across many species, there are within-species individual differences in behavior that are consistent across time and ecological contexts (a.k.a. behavioral syndromes or animal personalities). This within-population, individual variation in behavior are extremely important ecologically because they imply limited plasticity in behavioral traits, thus constraining the ability of animals to behave optimally across multiple situations; especially in the scope of rapid environmental change. The goal of my research project is to determine if individual African cichlid fish (Pseudocrenilabrus multicolor) show consistent, individual differences in boldness across anti-predation and foraging contexts. I expect that individual fish that exhibit bold behavior under simulated predation risk remain bold in both contexts. To test these predictions, I measured the latency to emerge from refuge and time spent foraging after a simulated predator attack. Individual P. multicolor juveniles (n = 40) were selected at random from multiple broods (n = 5 per brood) that were generated from wild caught parents and housed individually in tanks with identical areas of refuge. Each trial was recorded using a digital video camera and later analyzed for behavioral responses. Preliminary results suggest that within a single population, fish exhibit consistent individual differences of boldness, i.e. some individuals are consistently more bold, where as others are consistently more shy. The consequences of this could be that individuals with a bold behavioral type may take unnecessary risks and suffer higher mortality in dangerous environments. Further investigation of the functional significance of behavioral types between populations experiencing alternate environmental extremes is planned.