Drone Incoming! : Species Specific Responses to an Unmanned Aerial Vehicle

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The epithet “bird brain” could be considered scientifically inaccurate; several of our winged friends must take into consideration a multitude of factors for their survival even when engaging in an activity as innocuous as consuming a snack. In the evolutionary arms race of predator versus prey, different species have developed a variety of methods to respond to or escape predation. In an era of rapidly developing technology, birds not only have to contend with natural predators but also the possibility that, in the very near future, there will be objects flying through their air space which may prove disruptive to their natural habitat, such as unmanned aerial vehicles (UAVs) or drones (Gade et. al., 2015; Ogden, 2013). Drones present a unique challenge and tool for ecologists due to their small size and low flying distance from the ground as they occupy the same aerial space as that of song birds and other small prey birds (Anderson & Gaston, 2013; Jones IV et. al., 2006). To our current knowledge, there has only been one study which has used drone technology to survey bird populations (Weissensteiner, Poelstra, & Wolf, 2015). Additionally, there has only been one study which used drones to observe and elicit bird responses - it demonstrated that birds reacted more to vertical downward swoops than other horizontal approaches (Vas et. al., 2015). However, no study has used drones to understand the characteristics of flight or fight behavior across different species. Our study aimed to use drone technology to look at species specific responses to drones. The results of our pilot experiments suggest that tufted titmice (Baeolophus bicolor) tended to flee from an area in response to the initiation of drone flight more quickly than black-capped chickadees (Poecile atricapillus). We did not see a difference in the tendencies of the chickadees and titmice to return to the feeders after the conclusion of the drone flight – indicating that the drones did not seem to produce species specific differences in wariness to predators.