

Investigating the Gravity Bias in Two Amphibious Mammalian Species

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The ongoing relationship between a St. Francis College researcher and the mammal care and training team at the Long Island Aquarium and Exhibition Center (LIAEC) in Riverhead NY has led to a number of interesting research studies over the years. Currently we are engaged in a new and successful study testing both a California sea lion (*Zalophus californianus*), and a Harbor seal (*Phoca vitulina*) on what has been termed the *gravity bias*. A gravity bias is an effect that is observed when “preschool children expect a falling object to travel in a straight line even when there are clear physical mechanisms that deviate the object's path” (as cited by Hood, Houser, Anderson, & Santos, 2001, p. 35) The gravity bias has been witnessed in infants and children up to the age of three years (Gomez, 2005), non-human primates such as the chimpanzee (*Pan troglodytes*) (Tomonaga, Imura, Mizuno, & Tanaka, 2007) and Rhesus macaque (*Macaca mulatta*) (Southgate & Gomez, 2006), as well as the domesticated dog (*Canis Lupus Familiaris*) (Osthaus, Slater, & Lea, 2003). While pinnipeds may in fact demonstrate a gravity bias, they are known to be good at inhibitory tasks, therefore, unlike other species tested, we hypothesized they would be able to be ‘trained out’ of any shown biases. Understanding how an aquatic mammal, such as a pinniped, may perform under similar testing conditions as that of children and various non-human terrestrial animals provides insight into how these aquatic species make decisions in a means-ends task. It should also be noted that to accomplish the experiment, a solid collaboration between trainers and researchers has been essential as the procedures must be designed with appropriate research methodology and trainers must ensure the animals are trained appropriately to interact with the testing apparatus. Results of the subjects’ overall performance and the researcher/trainer relationship will be discussed.

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