

# Aggressive interactions between smooth-coated otters and water monitor lizards in Singapore

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## Abstract

Smooth-coated otters (*Lutrogale perspicillata*) and Malayan water monitor lizards (*Varanus salvator*) occupy similar habitats and interact regularly in Singapore's waterways. These interactions have a range of potential outcomes and are sometimes lethal. Few formal behavioral studies exist for either species. We analyzed interactions between otters and monitor lizards by gleaning data from publicly available videos from citizen scientists to examine what factors influence aggressive and defensive behaviors, and what influences vigilance in otters. Behavioral sequence analysis revealed no obvious monitor lizard behavior that predicted otter aggression towards monitors. We found that the presence and number of otter pups is positively associated with otter aggression. Otters also tended to be more vigilant in groups with more pups, and more vigilant on land than water. Monitor lizards displayed aggressive and defensive behaviors more frequently than did otters, regardless of whether the otters were aggressive towards lizards. These observations suggests that otters vary their aggression and vigilance levels depending on the context of each interaction.

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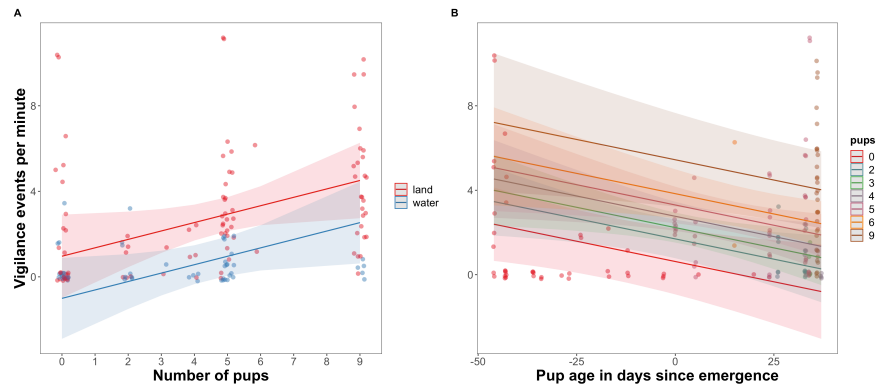
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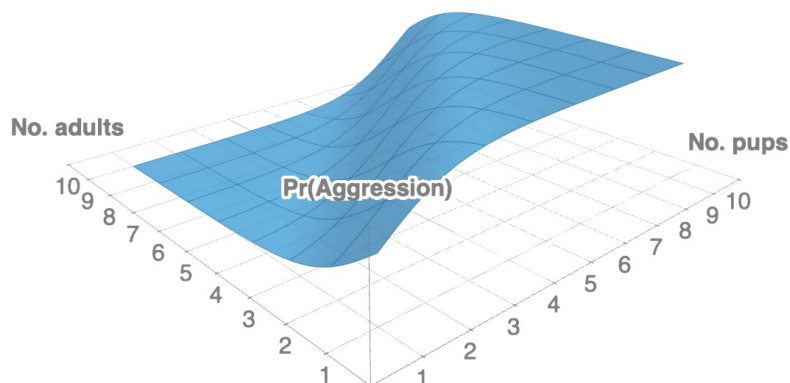
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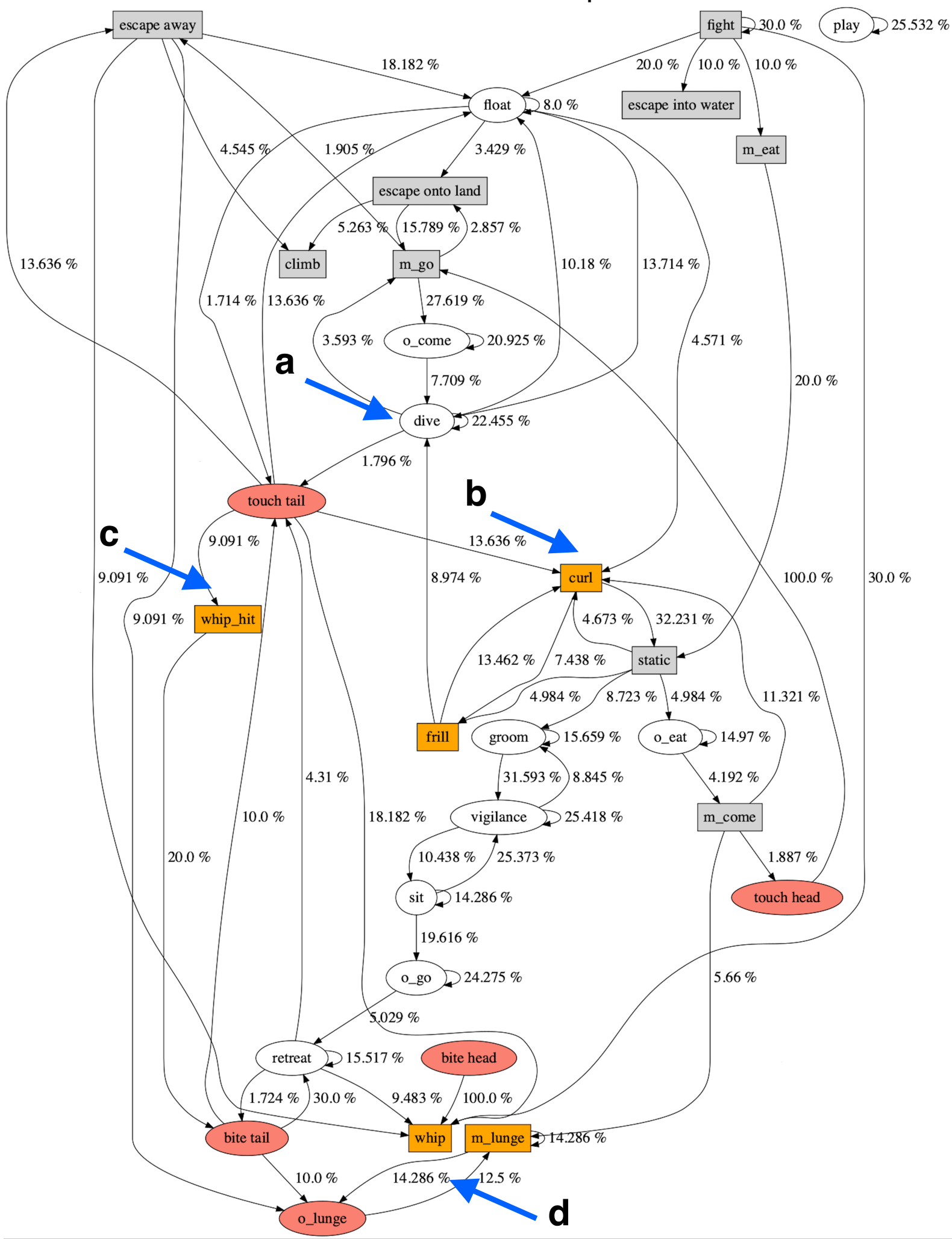
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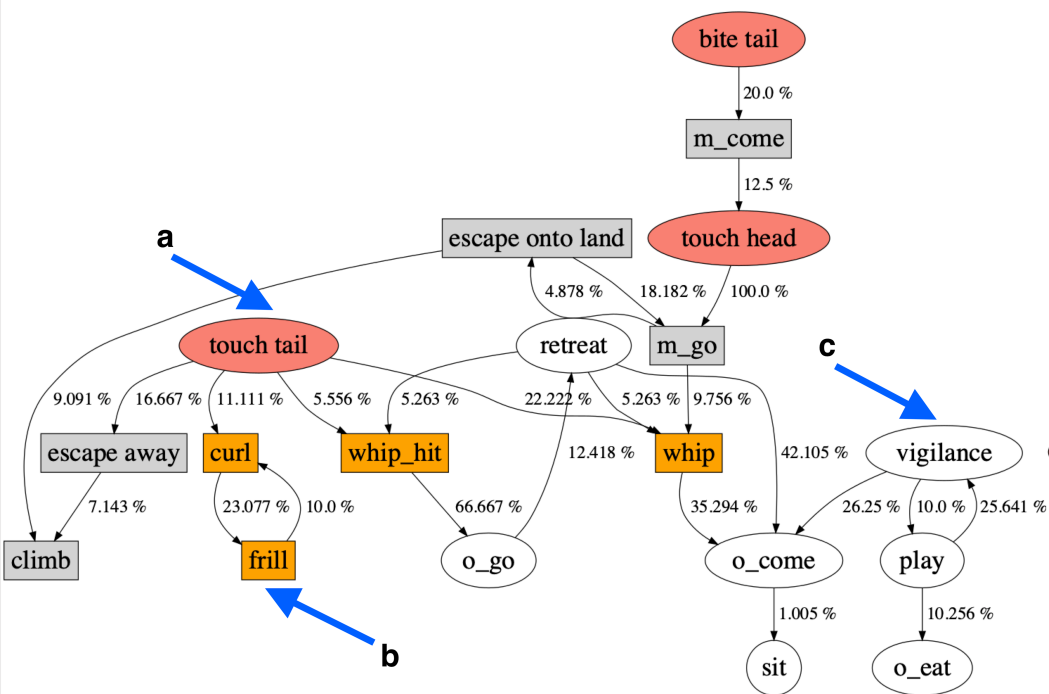
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# Combined Behavioral Sequences



**A**



**B**

