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## Behavioural ecology of the prey capture behaviour in larval antlions

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Foraging strategies in predators can be classified into three distinct hunting modes: widely foraging, active predators that search continuously for prey; sit and pursue predators, which remain at a constant location and move only to attack prey that comes within the predator's hunting distance; and sit-and-wait (ambush) predators. Sit-and-wait predators are web spiders and antlions, where the hunting strategy includes waiting for prey at a fixed location for prolonged time.

Antlion larvae are well known according to their amazing prey capture strategy. In approximately 10% of species, the larvae construct pitfall traps and are considered as strict sit-and-wait predators, while the majority of sand dwelling antlion species ambush prey just beneath the sand surface without a pit. When studying two antlion species with different prey capture habits, we demonstrated that trap-building strategy does not mean greater behaviour diversity, despite of the fact that the pit-building habit derived from the non-pit-building strategies.

Behavioural experiments studying predator-prey interactions and measurements of vibrations propagated in sandy substrates revealed that antlions are extremely sensitive to substrate vibrations produced by prey crawling on the sand surface. Prey produce low-frequency sand-borne vibrations, and to locate a source of vibration, antlions rely on time differences of waveforms arriving at their receptors—tufts of hairs positioned on lateral parts of the body. Furthermore, we elucidated the role of physical properties of sand in both, substrate-borne vibration transmission and pit construction.