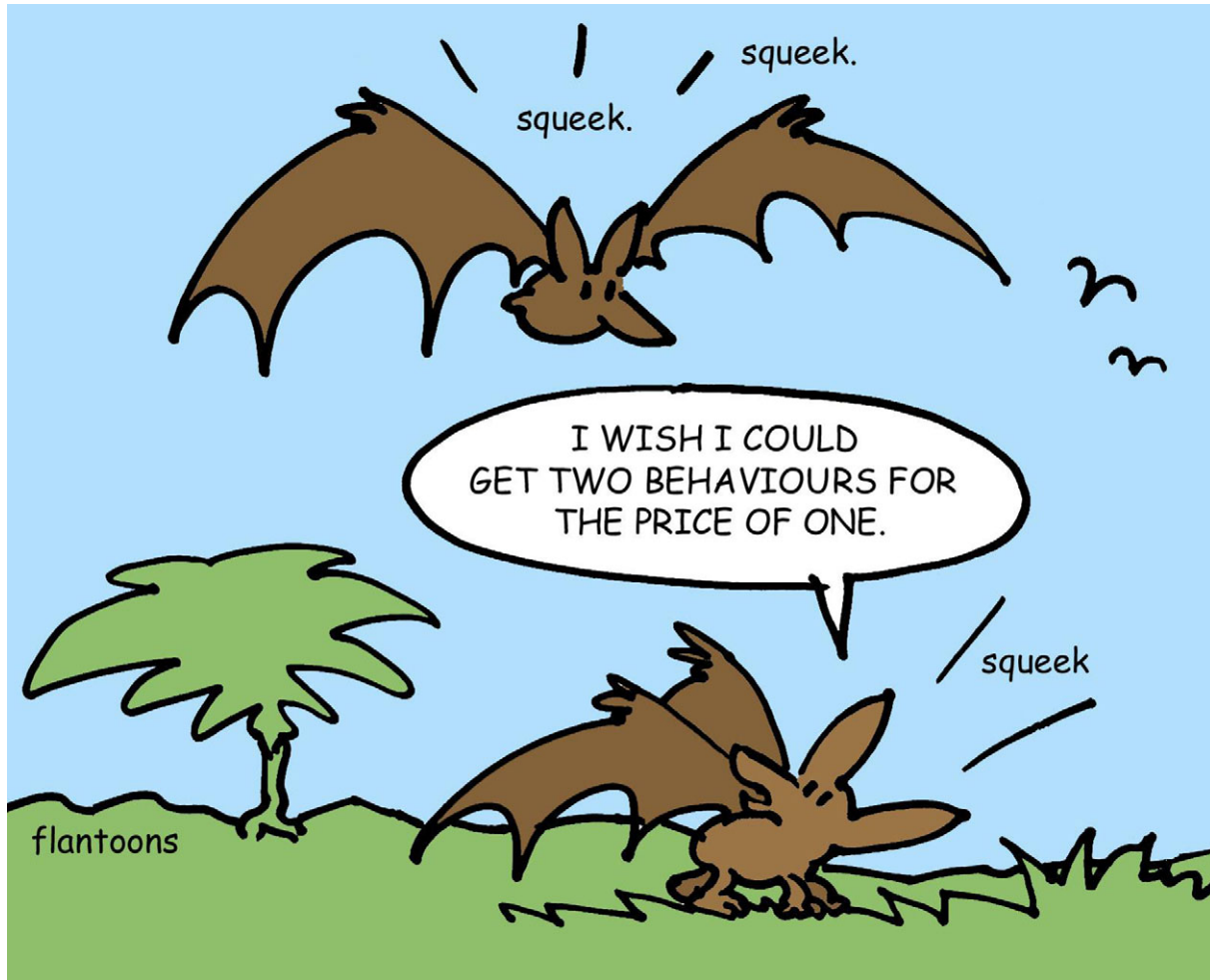


WALKING BATS DO NOT COORDINATE CALLS TO CUT COSTS



Echolocation is an energetically expensive way to sense the surrounding environment, but bats have got around this by synchronising their breathing pattern with their wing beat cycle. By doing this flying bats have reduced the cost of echolocation to almost nothing. But what about terrestrial bats that crawl on all fours, have they also reduced their echolocation costs by synchronising their breathing and footfall patterns? Curious to find out how terrestrial bats deal with the prohibitive costs of echolocation, Stuart Parsons, Daniel Riskin and John Hermanson filmed *Mystacina tuberculata* as the animals walked and flew

while recording their echolocation calls (p. 551).

Analysing the movies, it was clear that the bats did synchronise their calls with their wing beats during flight, but instead of producing one call at the start of each downstroke, *M. tuberculata* called twice, once at the end of the downstroke and early in the upstroke, suggesting that it uses alternative mechanisms from other flying bats to save energy when generating calls. Also, *M. tuberculata* did not coordinate its calls with its footfall pattern while walking and its calls were weaker and more frequent. So *M. tuberculata* do not cut their

echolocation costs while walking. The team is unsure why the animals produce echolocation calls, when other senses would do better when crawling through acoustically cluttered leaf litter on the ground.

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Parsons, S., Riskin, D. K. and Hermanson, J. W. (2010). Echolocation call production during aerial and terrestrial locomotion by New Zealand's enigmatic lesser short-tailed bat, *Mystacina tuberculata*. *J. Exp. Biol.* **213**, 551-557.

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