

University of Groningen

## Levy walks evolve through interaction between movement and environmental complexity

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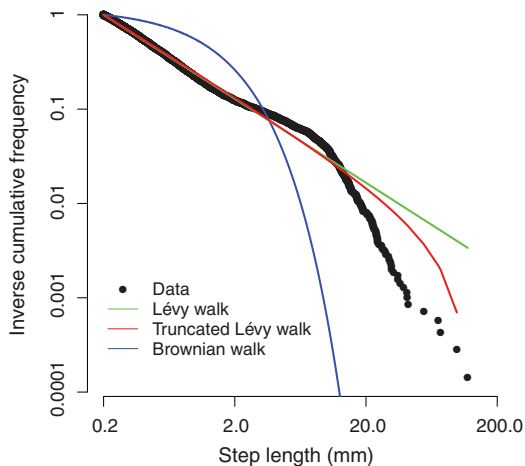
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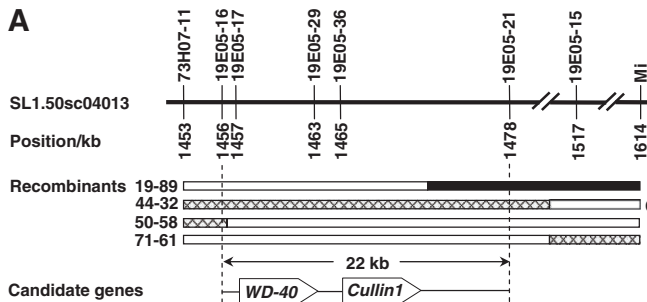
**Reports:** "Lévy walks evolve through interaction between movement and environmental complexity" by M. de Jager *et al.* (24 June, p. 1551). The statistical analysis of the mussel movement contained errors, which were pointed out by V. Jansen. First, the data that was used contained duplicates of a number of individuals, while other individuals had accidentally been omitted. Second, the parameter of the exponential distribution (which describes the Brownian walk strategy) was mistakenly estimated without considering the lower boundary of the data. Third, the AIC was estimated incorrectly, by using a least-squares rather than a maximum-likelihood calculation. Additionally, the weighed AIC was calculated incorrectly. These mistakes have been corrected using the methods of Edwards *et al.* [A. M. Edwards *et al.*, *Nature* **449**, 1044 (2007)]; the results of the new analysis are plotted in a new Fig. 1B shown here (left). In Fig. 1B of the original Report, a Rayleigh distribution was accidentally plotted instead of an exponential distribution to describe the Brownian walk. In the statistical analysis, however, an exponential distribution was used to describe a Brownian walk. Furthermore, the movement patterns of mussels in different density treatments were reanalyzed after the comments of F. van Langevelde. The former results were found to be erroneous due to an error in the script; the scaling



ing exponent of the movement strategy does not stay constant when mussel density increases. Although some corrections were made to the data and movement analysis, the overall conclusion of the paper that mussels adopt a Lévy walk, especially when alone, remains unchanged. We thank V. Jansen and F. van Langevelde for bringing these issues to our attention.

**Perspectives:** "Functional extinctions of bird pollinators cause plant declines" by C. H. Sekercioglu (25 February, p. 1019). In the equation in the caption, the first "100" should have been "log". The correct equation is: Specialization index =  $\log [100 / (\text{number of habitats used} \times \text{number of food types eaten})]$ . The error has been corrected in the HTML and PDF versions online.

**Reports:** "A pollen factor linking inter- and intraspecific pollen rejection in tomato" by W. Li and R. T. Chetelat (24 December 2010, p. 1827). Figure 1A did not display the correct patterns within the four horizontal bars representing genotypes of recombinants. The bars should have appeared as follows (open bars, homozygous for *S. lycopersicum* allele; hatched, heterozygous; solid, homozygous *S. pennellii*). The corrected figure is shown here (right). The figure has also been corrected in the HTML version online.



## TECHNICAL COMMENT ABSTRACTS

### Comment on "Nocturnality in Dinosaurs Inferred from Scleral Ring and Orbit Morphology"

Margaret I. Hall, E. Christopher Kirk, Jason M. Kamlar, Matthew T. Carrano

Schmitz and Motani (Reports, 6 May 2011, p. 705) claimed to definitively reconstruct activity patterns of Mesozoic archosaurs using the anatomy of the orbit and scleral ring. However, we find serious flaws in the data, methods, and interpretations of this study. Accordingly, it is not yet possible to reconstruct the activity patterns of most fossil archosaurs with a high degree of confidence.

Full text at [www.sciencemag.org/cgi/content/full/334/6063/1641-b](http://www.sciencemag.org/cgi/content/full/334/6063/1641-b)

### Response to Comment on "Nocturnality in Dinosaurs Inferred from Scleral Ring and Orbit Morphology"

Lars Schmitz and Ryosuke Motani

Hall *et al.* claim that it is not yet possible to infer the diel activity patterns of fossil archosaurs with high confidence. We demonstrate here that this assertion is founded on unscreened data, untenable assumptions, and inappropriate methods. Our approach follows ecomorphological and phylogenetic principles in a probabilistic framework, resulting in statistically well-supported reconstructions of diel activity patterns in Mesozoic archosaurs.

Full text at [www.sciencemag.org/cgi/content/full/334/6063/1641-c](http://www.sciencemag.org/cgi/content/full/334/6063/1641-c)