DESCRIPTION

First published in 1953, Animal Behaviour is a leading international publication and has wide appeal, containing critical reviews, original papers, and research articles on all aspects of animal behaviour. Book Reviews and Books Received sections are also included.

Growing interest in behavioural biology and the international reputation of Animal Behaviour prompted an expansion to monthly publication in 1989. Animal Behaviour continues to be the journal of choice for biologists, ethologists, psychologists, physiologists, and veterinarians with an interest in the subject.

Research Areas include:
• Behavioural ecology
• Evolution of behaviour
• Sociobiology
• Ethology
• Behavioural psychology
• Behavioural physiology
• Population biology
• Sensory behaviour
• Navigation and migration

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INTRODUCTION

Types of article
Research papers
Animal Behaviour publishes original papers relating to all aspects of the behaviour of animals, including humans. Papers may be field, laboratory or theoretical studies. Preference is given to studies that are likely to be of interest to the broad readership of the Journal and that test explicit hypotheses rather than being purely descriptive.

Reviews
These should address fundamental issues relating to behaviour and provide new insights into the subject(s) they cover. Original interdisciplinary syntheses are especially welcome. Reviews should be no longer than 6000 words (excluding references) and should include an abstract of up to 300 words. In the first instance, a preliminary outline of up to 600 words should be submitted online (see Contact details for submission below). The decision as to whether to proceed to a full review then rests with the Executive Editors or invited advisers. Contributions submitted on this basis will be subjected to the same refereeing process as normal manuscripts.

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The Commentaries section of the Journal provides an opportunity to raise issues of general importance to the study of behaviour, including statistical analysis, theory, methodology and ethics. Unless there are clearly broader implications for the study of behaviour as a whole, critiques of particular papers or issues of more local interest should be reserved for the Forum section (see below). Decisions as to whether borderline submissions are more appropriate to the Commentaries or Forum section rest with the Executive Editors. Contributions should be brief, normally not more than six printed pages, and should not contain an abstract. Methodological contributions may be longer, and may contain an abstract, subject to the discretion of the Executive Editors. The initial decision as to prima facie merit rests with the Executive Editors or invited advisers. Contributions with prima facie merit are subjected to the same refereeing process as normal manuscripts, but responses or complementary articles may be solicited by the Executive Editors at their discretion. Other contributions are returned unrefereed to the author(s).

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Animal Behaviour has instituted a double-blind peer review process (i.e., where neither the authors' nor the reviewers' identities are known to each other). Reciprocal anonymity is suggested to provide a more objective and potentially less biased assessment of manuscripts, and help ensure that the process is fair to both junior and well-established scientists. The switch to double blind-review requires some changes to editorial procedures, and we ask potential authors to pay close attention
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For other general correspondence:

The address of the UK office is: Dr A.K. Turner, Managing Editor, Animal Behaviour Editorial Office, School of Life Sciences, University of Nottingham, University Park, Nottingham NG7 2RD, U.K. (e-mail: angela.turner@nottingham.ac.uk).

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**BEFORE YOU BEGIN**

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Welfare of nonhuman animal and human subjects

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Ethical note. Ethical considerations arising from the study must be addressed in the Methods in a separate subsection headed Ethical Note. Although no technique or approach is absolutely forbidden if scientifically justified, the ethical study of living subjects is paramount to good science, especially in behaviour. As such, authors are asked to describe, explain and justify the techniques and approaches that they used in their study as related to nonhuman animal/human welfare. The goal of this subsection is not to repeat methodology or to copy/paste from approved ethics protocols. Instead, this
subsection allows authors to explain the actual approach to and constraints in managing or enhancing the welfare of their research subjects, providing the reader with a more comprehensive understanding of the limitations of the study methodology and, thus, a better understanding of the value of the results and conclusions. Moreover, Animal Behaviour is an international journal that welcomes submissions from researchers from around the world. The Ethical Note allows our diverse group of Editors and reviewers the opportunity to assess clearly, fairly and equitably the ethical concerns of methodologies that have originated from countries and jurisdictions with diverse customs and variation in legal protections of both nonhuman animal and human welfare.

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The list below is a guide to some of the main issues requiring consideration from an ethical point of view in manuscripts submitted to Animal Behaviour. It is a guide only and not intended to be exhaustive. Its purpose is to encourage authors to reflect on their procedures prior to submitting their manuscript for review to reduce the need for Editors to request further details. See also the 'Guidelines for the ethical treatment of nonhuman animals in behavioural research and teaching' (updated in each January issue of the journal: https://doi.org/10.1016/j.anbehav.2022.09.006). For further details on how to report experiments using live animals, see the ARRIVE guidelines (https://arriveguidelines.org/arrive-guidelines). For studies involving human subjects, please refer to https://www.apa.org/ethics/code/index.

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Results should be clear and concise. This section should include only results that are relevant to the hypotheses outlined in the Introduction and considered in the Discussion. The text should complement material given in Tables or Figures but should not directly repeat it. Give full details of statistical analysis either in the text or in Tables or Figure legends. Include the type of test, the precise data to which it was applied, the value of the relevant statistic, the sample size and/or degrees of freedom, and the probability level. Number Tables and Figures in the order to which they are referred in the text. Means and standard errors/standard deviations (and medians and interquartile ranges/confidence limits), with their associated sample sizes, are given in the format $X +SE = 10.20+1.01 g$, $N = 15$, not $X = 10.20$, SE = 1.01, $N = 15$.

For significance tests, give the name of the test followed by a colon, the test statistic and its value, the degrees of freedom or sample size (whichever is the convention for the test) and the $P$ value (note that $F$ values have two degrees of freedom). The different parts of the statistical quotation are separated by a comma.

If the test statistic is conventionally quoted with degrees of freedom, these are presented as a subscript to the test statistic. For example:

ANOVA: $F_{1,11} = 7.89, P = 0.017$
Kruskal-Wallis test: $H_{11} = 287.8, P = 0.001$
Chi-square test: $X^2_2 = 0.19, P = 0.91$
Paired $t$ test: $t_{12} = 1.99, P = 0.07$

If the test is conventionally quoted with the sample size, this should follow the test statistic value. For example:

Spearman rank correlation: $r_9 = 0.80, N = 11, P < 0.01$
Wilcoxon signed-ranks test: $T = 6, N = 14, P < 0.01$
Mann-Whitney $U$ test: $U = 74, N_1 = N_2 = 17, P < 0.02$

$P$ values for significant outcomes can be quoted as below a threshold significance value (e.g. $P < 0.05, 0.01, 0.001$), but wherever possible should be quoted as an exact probability value. Departure from a significance threshold of 0.05 should be stated and justified in the Methods. Marginally nonsignificant outcomes can be indicated as exact probability values or as $P < 0.1$. Nonsignificant outcomes should be indicated with an exact probability value whenever possible, or as NS or $P > 0.05$, as appropriate for the test.

State whether a test is one tailed or two tailed (or specific or nonspecific in the case of Meddis’ nonparametric ANOVAs). One-tailed (or specific) tests should be used with caution. Their use is justified only when there are strong a priori reasons for predicting the direction of a difference or trend and results in the opposite direction can reasonably be regarded as equivalent to no difference or trend at all. Authors are referred to Kimmel (1957, *Psychological Bulletin*, 54, 315-353).

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Power tests. Where a significance test based on a small sample size yields a nonsignificant result, explicit consideration should be given to the power of the data for accepting the null hypothesis. Authors are referred to Thomas and Juanes (1996, Animal Behaviour, 52, 856-859) and Colegrave and Ruxton (2003, Behavioral Ecology, 14, 446-447) for guidance on the appropriate use of power tests. Providing a value for power based on a priori tests is preferred. Values of observed power are not appropriate. Authors should consider effect sizes and their confidence intervals in drawing conclusions regarding the null hypothesis.

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