Peer judging of peer review quality

Janne-Tuomas Seppänen
Founder, Peerage of Science

@JanneSeppanen  @peeragescience
Why?
### Table 1  Journal peer review survey data

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A reviewer was incompetent</td>
<td>61.8%</td>
</tr>
<tr>
<td>A reviewer was biased</td>
<td>50.5%</td>
</tr>
<tr>
<td>A reviewer required you to include unnecessary references to his/her publication(s)</td>
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<tr>
<td>Comments from reviewers included personal attacks</td>
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<td>A reviewer delayed the review so that he/she could publish</td>
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http://rpubs.com/neilfws/65778
by Neil Saunders

Retraction notices in PubMed

Retractions / 100k articles


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We need to judge peer review quality.
How?
Essays.
“Essay consist of four required sections (together not exceeding 1000 words in total), plus optionally references and additional comments (length not limited)”
**Merits** (required) Description of the merits of and support for the manuscript. If the manuscript has no merits, state that in this section.

**Critique** (required) Description of the weaknesses and problems of the manuscript. If the manuscript has no weaknesses or problems, state that in this section.
Critique (required) Description of the weaknesses and problems of the manuscript. If the manuscript has no weaknesses or problems, state that in this section.

Discussion (required) For example, your views regarding the importance and implications of the
Discussion (required) For example, your views regarding the importance and implications of the research, or how to improve the research.
STAGE 1: Number of reviews received: 4

| Peer 1524 | Essay |
| Peer 1523 | Essay |
| Peer 1526 | Essay |
| Peer 1528 | Essay |

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<td>Major</td>
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<td>Minor</td>
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Peer judging.
Introduction
The resistant host - cuckoo brood parasite system has received relatively little research. This study provides a detailed description of a resistant population under cuckoo parasitism risk that includes long-term data on parasitism rates, temporal trends in laying time of host and parasites, the fates of cuckoo eggs and chicks in this system and an extensive egg parasitism experiment. The study further identifies and discusses the uniqueness of the model system and this system's potential in understanding host-parasite co-evolution.

Merits
The study provides a thorough and detailed overview of basic parameters of the study population. An obvious strength is the long-term (10 season) and large data population characteristics are calculated.

The study also nicely underlines the need and priority of a metapopulation approach, and with this in mind the authors do not overextend their study aims, but focus on providing the needed detail for comparison with previous studies. By reporting data in an exact or similar way as previous studies, the authors have greatly facilitated the comparisons. The study also provides direct evidence of the origin of the cuckoo eggs found on the nest.
Score for identifying Merits of the research (required)
Essay should accurately acknowledge the strengths of the manuscript. The lack of acknowledgement where is was due, as well as unjustified support, should lower the score for this section.

Support unjustified, or strengths not acknowledged  

Support is accurate and justified
The discussion falls away a little towards the end, as different results are very briefly discussed in sequence. Some more common themes could be maintained for the paragraphs here.

**Score for Critique on research (required)**
Essay should accurately address weaknesses of the manuscript. The lack of critique where it was due, as well as unjustified critique, should lower the score for this section.

- Critique unjustified, or problems not recognized
- Critique is accurate and justified

Score: 1 2 3 4 5
This is a valuable study contributing independent data to a little studied system and providing a synthesis and comparison of the basic system attributes detailed in the existing population datasets. The emphasis on the value of this data from a meta-replication approach is spot-on, and the matching of descriptive measures used in previous studies is a strength of this paper.

Score for Discussing research (required)
Essay should go beyond simple critique and support; it should identify and discuss e.g. the importance, implications or improvements of the research.

No original contribution or meaningful discussion 🔄 1 2 3 4 5 🔄 Original contribution, new scientific value
Burden?
81% choose the default 7-day deadline for Stage 2
MANY DO PEER-REVIEW-OF-PEER-REVIEW IMMEDIATELY

MEDIAN COMPLETION TIME: 47h 40min
Impact.

Peerage of Science
1) Very brief review (one-two sentences)
2) Succinct review (3–4 sentences)
3) Moderate volume of comments (50–100 words)
4) Significant length and detail (200–500+ words)
Median: 571 words

Essay wordcount
**Merits:**
Description of the merits of and support for the manuscript

**Critique:**
Description of the weaknesses and problems of the manuscript.

**Discussion:**
Importance and implications, or how to improve the research.
$R^2 = 0.349$
Distribution of scores for PEQ across all articles

- 3% for <1.75
- 4% for 2.0
- 9% for 2.5
- 12% for 3.0
- 21% for 3.5
- 20% for 4.0
- 22% for 4.5
- 6% for >4.75
54% of Essays

Review with References.
Meaningful academic recognition.
The Reviewer Prize

Quality² x N_{essays}
What is success in peer review?

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Introduction

This study aims to evaluate the ability of species distribution model to estimate the real distribution of species. It builds on a large dataset of presence points of a snake in Argentina, and compare this “empirical distribution” (assumed to be the “real distribution”), with that estimated using 6 species distribution algorithms.

The results show a general agreement between empirical and modelled distributions, but also mismatches that vary among the algorithms (and variables used). They conclude that SDMs can be useful to approximate the distribution of species, but may also lead to serious errors which inevitably affect conservation management and planning.

Merits

This paper has the merit of attempting evaluating SDMs performances. This is an important as SDMs are largely used in many and conservation and directions expanding their merits and potential to provide.

Critique

The idea of assessing algorithm performances is not new and has been performed in several papers that provide a good insight into modelling algorithms and their strenght/weaknesses under different situations. However, this study developed new methods and presented several modelling problems.

The authors assume that dataset to represent the “real species distribution” in Argentina, and that data are considered to real distributions but do not provide any evidence of sampling effort distribution within Argentina. It seems unreasonable that Argentina has been entirely sampled.
The work is not of publishable quality in its current form, and the authors did not revise it despite the reviewers' suggestions.
What is success in peer review? Rigour.
Thank you

Peerage of Science

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University of Eastern Finland

Turun yliopisto
University of Turku

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