

Maternal effects obscure condition-dependent sex allocation in changing environments

A. M. Edwards, E. Z. Cameron, E. Wapstra and J. McEvoy

Article citation details

R. Soc. open sci. **6**: 181885.

<http://dx.doi.org/10.1098/rsos.181885>

Review timeline

Original submission: 20 November 2018

Revised submission: 28 February 2019

Final acceptance: 5 March 2019

Note: Reports are unedited and appear as submitted by the referee. The review history appears in chronological order.

Note: This manuscript was transferred from another Royal Society journal with peer review.

Review History

RSOS-181885.R0 (Original submission)

Review form: Reviewer 1 (Marco Festa-Bianchet)

Is the manuscript scientifically sound in its present form?

Yes

Are the interpretations and conclusions justified by the results?

Yes

Is the language acceptable?

No

Is it clear how to access all supporting data?

Yes

Do you have any ethical concerns with this paper?

No

Have you any concerns about statistical analyses in this paper?

No

Recommendation?

Accept with minor revision (please list in comments)

Comments to the Author(s)

I have reviewed an earlier submission of this ms and most of my concerns were addressed. I remain convinced that this experiment is an interesting contribution to our knowledge of adaptive offspring sex ratio manipulation. I have a few minor comments, mostly about the writing:

L. 65-67: this is a somewhat simplistic representation of the hare-lynx dynamics. All that is said here is correct, but it is not the sole driver of the cycle, therefore the wording should be more cautious.

L. 98-101: Here the wording should be modified to clarify that the female offspring are the focus - the current wording may suggest an effect on the treated mothers.

L. 113-114: #2 is not presented as an hypothesis - what would be the prediction?

L. 119-122: Please stick to one tense. Other sections of the paper also switch from present to past.

L. 220: I do not understand what "has resulted in the bias disappearing".

Marco Festa-Bianchet

Review form: Reviewer 2

Is the manuscript scientifically sound in its present form?

Yes

Are the interpretations and conclusions justified by the results?

Yes

Is the language acceptable?

Yes

Is it clear how to access all supporting data?

Yes

Do you have any ethical concerns with this paper?

No

Have you any concerns about statistical analyses in this paper?

No

Recommendation?

Accept as is

Comments to the Author(s)

Greatly improved and now much clearer - a nice paper with important results. As Ref 2 points out, sample sizes are small - but results are convincing. Can be published as it stands

Decision letter (RSOS-181885.R0)

14-Feb-2019

Dear Professor Edwards

On behalf of the Editors, I am pleased to inform you that your Manuscript RSOS-181885 entitled "Maternal effects obscure condition-dependent sex allocation in changing environments" has been accepted for publication in Royal Society Open Science subject to minor revision in accordance with the referee suggestions. Please find the referees' comments at the end of this email.

The reviewers and handling editors have recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the comments and revise your manuscript.

- Ethics statement

If your study uses humans or animals please include details of the ethical approval received, including the name of the committee that granted approval. For human studies please also detail whether informed consent was obtained. For field studies on animals please include details of all permissions, licences and/or approvals granted to carry out the fieldwork.

- Data accessibility

It is a condition of publication that all supporting data are made available either as supplementary information or preferably in a suitable permanent repository. The data accessibility section should state where the article's supporting data can be accessed. This section should also include details, where possible of where to access other relevant research materials such as statistical tools, protocols, software etc can be accessed. If the data has been deposited in an external repository this section should list the database, accession number and link to the DOI for all data from the article that has been made publicly available. Data sets that have been deposited in an external repository and have a DOI should also be appropriately cited in the manuscript and included in the reference list.

If you wish to submit your supporting data or code to Dryad (<http://datadryad.org/>), or modify your current submission to dryad, please use the following link:
<http://datadryad.org/submit?journalID=RSOS&manu=RSOS-181885>

- Competing interests

Please declare any financial or non-financial competing interests, or state that you have no competing interests.

- Authors' contributions

All submissions, other than those with a single author, must include an Authors' Contributions section which individually lists the specific contribution of each author. The list of Authors should meet all of the following criteria; 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published.

All contributors who do not meet all of these criteria should be included in the acknowledgements.

We suggest the following format:

AB carried out the molecular lab work, participated in data analysis, carried out sequence alignments, participated in the design of the study and drafted the manuscript; CD carried out the statistical analyses; EF collected field data; GH conceived of the study, designed the study, coordinated the study and helped draft the manuscript. All authors gave final approval for publication.

- Acknowledgements

Please acknowledge anyone who contributed to the study but did not meet the authorship criteria.

- Funding statement

Please list the source of funding for each author.

Please ensure you have prepared your revision in accordance with the guidance at <https://royalsociety.org/journals/authors/author-guidelines/> -- please note that we cannot publish your manuscript without the end statements. We have included a screenshot example of the end statements for reference. If you feel that a given heading is not relevant to your paper, please nevertheless include the heading and explicitly state that it is not relevant to your work.

Because the schedule for publication is very tight, it is a condition of publication that you submit the revised version of your manuscript before 23-Feb-2019. Please note that the revision deadline will expire at 00.00am on this date. If you do not think you will be able to meet this date please let me know immediately.

To revise your manuscript, log into <https://mc.manuscriptcentral.com/rsos> and enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions". Under "Actions," click on "Create a Revision." You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript and upload a new version through your Author Centre.

When submitting your revised manuscript, you will be able to respond to the comments made by the referees and upload a file "Response to Referees" in "Section 6 - File Upload". You can use this to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the referees. We strongly recommend uploading two versions of your revised manuscript:

- 1) Identifying all the changes that have been made (for instance, in coloured highlight, in bold text, or tracked changes);
- 2) A 'clean' version of the new manuscript that incorporates the changes made, but does not highlight them.

When uploading your revised files please make sure that you have:

- 1) A text file of the manuscript (tex, txt, rtf, docx or doc), references, tables (including captions) and figure captions. Do not upload a PDF as your "Main Document";
- 2) A separate electronic file of each figure (EPS or print-quality PDF preferred (either format should be produced directly from original creation package), or original software format);

- 3) Included a 100 word media summary of your paper when requested at submission. Please ensure you have entered correct contact details (email, institution and telephone) in your user account;
- 4) Included the raw data to support the claims made in your paper. You can either include your data as electronic supplementary material or upload to a repository and include the relevant doi within your manuscript. Make sure it is clear in your data accessibility statement how the data can be accessed;
- 5) All supplementary materials accompanying an accepted article will be treated as in their final form. Note that the Royal Society will neither edit nor typeset supplementary material and it will be hosted as provided. Please ensure that the supplementary material includes the paper details where possible (authors, article title, journal name).

Supplementary files will be published alongside the paper on the journal website and posted on the online figshare repository (<https://rs.figshare.com/>). The heading and legend provided for each supplementary file during the submission process will be used to create the figshare page, so please ensure these are accurate and informative so that your files can be found in searches. Files on figshare will be made available approximately one week before the accompanying article so that the supplementary material can be attributed a unique DOI.

Please note that Royal Society Open Science charge article processing charges for all new submissions that are accepted for publication. Charges will also apply to papers transferred to Royal Society Open Science from other Royal Society Publishing journals, as well as papers submitted as part of our collaboration with the Royal Society of Chemistry (<http://rsos.royalsocietypublishing.org/chemistry>).

If your manuscript is newly submitted and subsequently accepted for publication, you will be asked to pay the article processing charge, unless you request a waiver and this is approved by Royal Society Publishing. You can find out more about the charges at <http://rsos.royalsocietypublishing.org/page/charges>. Should you have any queries, please contact openscience@royalsociety.org.

Once again, thank you for submitting your manuscript to Royal Society Open Science and I look forward to receiving your revision. If you have any questions at all, please do not hesitate to get in touch.

Kind regards,
Andrew Dunn
Royal Society Open Science Editorial Office
Royal Society Open Science
openscience@royalsociety.org

on behalf of Dr Ryan Earley (Associate Editor) and Kevin Padian (Subject Editor)
openscience@royalsociety.org

Reviewer comments to Author:
Reviewer: 1

Comments to the Author(s)

I have reviewed an earlier submission of this ms and most of my concerns were addressed. I remain convinced that this experiment is an interesting contribution to our knowledge of

adaptive offspring sex ratio manipulation. I have a few minor comments, mostly about the writing:

L. 65-67: this is a somewhat simplistic representation of the hare-lynx dynamics. All that is said here is correct, but it is not the sole driver of the cycle, therefore the wording should be more cautious.

L. 98-101: Here the wording should be modified to clarify that the female offspring are the focus - the current wording may suggest an effect on the treated mothers.

L. 113-114: #2 is not presented as an hypothesis - what would be the prediction?

L. 119-122: Please stick to one tense. Other sections of the paper also switch from present to past.

L. 220: I do not understand what "has resulted in the bias disappearing".

Marco Festa-Bianchet

Reviewer: 2

Comments to the Author(s)

Greatly improved and now much clearer - a nice paper with important results. As Ref 2 points out, sample sizes are small - but results are convincing. Can be published as it stands

Author's Response to Decision Letter for (RSOS-181885.R0)

See Appendix A.

Decision letter (RSOS-181885.R1)

05-Mar-2019

Dear Professor Edwards,

I am pleased to inform you that your manuscript entitled "Maternal effects obscure condition-dependent sex allocation in changing environments" is now accepted for publication in Royal Society Open Science.

You can expect to receive a proof of your article in the near future. Please contact the editorial office (openscience_proofs@royalsociety.org and openscience@royalsociety.org) to let us know if you are likely to be away from e-mail contact. Due to rapid publication and an extremely tight schedule, if comments are not received, your paper may experience a delay in publication.

Royal Society Open Science operates under a continuous publication model (<http://bit.ly/cpFAQ>). Your article will be published straight into the next open issue and this will be the final version of the paper. As such, it can be cited immediately by other researchers.

As the issue version of your paper will be the only version to be published I would advise you to check your proofs thoroughly as changes cannot be made once the paper is published.

On behalf of the Editors of Royal Society Open Science, we look forward to your continued contributions to the Journal.

Kind regards,
Royal Society Open Science Editorial Office
Royal Society Open Science
openscience@royalsociety.org

on behalf of Dr Ryan Earley (Associate Editor) and Kevin Padian (Subject Editor)
openscience@royalsociety.org

Associate Editor Comments to Author (Dr Ryan Earley):
Associate Editor: 1
Comments to the Author:
(There are no comments.)

Reviewer comments to Author:

Follow Royal Society Publishing on Twitter: @RSocPublishing
Follow Royal Society Publishing on Facebook:
<https://www.facebook.com/RoyalSocietyPublishing.FanPage/>
Read Royal Society Publishing's blog: <https://blogs.royalsociety.org/publishing/>

Appendix A



Royal Society Open Science Editorial Office
22/02/2019

Dear Andrew Dunn,

Thank you for taking the time to consider our manuscript. We have made all of the changes suggested by the reviewer and have also amended the statements as requested by yourself. You should find everything completed accurately in the submission. Please let me know if there is anything outstanding. Responses to reviewer comments below in italics.

Kind Regards,
Amy Edwards

Reviewer comments to Author:
Reviewer: 1

Comments to the Author(s)

I have reviewed an earlier submission of this ms and most of my concerns were addressed. I remain convinced that this experiment is an interesting contribution to our knowledge of adaptive offspring sex ratio manipulation.

We thank Marco for his time and effort in reviewing our comments and have addressed all of them completely.

I have a few minor comments, mostly about the writing:

L. 65-67: this is a somewhat simplistic representation of the hare-lynx dynamics. All that is said here is correct, but it is not the sole driver of the cycle, therefore the wording should be more cautious.

This has been changed to a more cautious explanation. "high predation from lynx is linked to crashes in the snowshoe hare populations"

L. 98-101: Here the wording should be modified to clarify that the female offspring are the focus - the current wording may suggest an effect on the treated mothers.

We have adjusted the sentence to clarify that offspring are the focus. "Recently, we conducted a study on laboratory mice that used oral application of dexamethasone, to experimentally-induce a low stress gestational environment. Dexamethasone when applied to a mother during late gestation caused physiological changes in the stress response of her female offspring"

L. 113-114: #2 is not presented as an hypothesis - what would be the prediction?

We have adjusted and added in the prediction. "We propose two hypotheses, 1) that the combined treatments result in an additive response of decreased offspring sex ratios, predicted if females are responding independently to each of the environmental treatments, or 2) that the combined treatment results in a negated effect, predicted if

the response is due to maternal effects and the pre- and post-natal environments matching.”

L. 119-122: Please stick to one tense. Other sections of the paper also switch from present to past.

We have adjusted all places that we can find to past tense.

L. 220: I do not understand what "has resulted in the bias disappearing".

This has been changed to “These results are in line with hypothesis 2, that the offspring sex ratio is a result of maternal effects driven environments and has resulted in no offspring bias”

Marco Festa-Bianchet

Reviewer: 2

Comments to the Author(s)

Greatly improved and now much clearer - a nice paper with important results. As Ref 2 points out, sample sizes are small - but results are convincing. Can be published as it stands

We thank reviewer 2 for their time and comments.



22 Feb 2019

Dr Amy Edwards
Post-Doctoral Researcher

DATE

La Trobe University
Department of Ecology,
Environment and Evolution
Bundoora, Melbourne
Victoria Australia

T +61 3 9479 2245
M +61 4 1888 0975
a.edwards@latrobe.edu.au