Round #2

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by Jean-François Lemaitre, 26 Sep 2023 12:14
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MINOR Revision

I have now read the revised version of the manuscript '*Telomere length vary with sex, hatching rank and year of birth in little owls, Athena noctua*'.

Authors have carefully addressed the comments raised by the two reviewers and I have no doubt that this manuscript will constitute a relevant contribution to the 'evolutionary ecology of telomere dynamics' literature.

I have a few minor comments on this revised version that authors should be able to address easily and rapidly.

Thank you for your positive feedback on the revised version. We have addressed all the remaining comments as described below.

- Line 45: Consider quoting Armstrong & Boonekamp 2018 (Ageing Research Reviews 85:101854)

Done. We think the reference is Amstrong and Boonekamp 2023. (lines 44-45).

- Line 52-54: Very complex sentence. Please rephrase / split in 2.

The sentence has been rephrased. (lines 52-55).

- Line 58: Could give one or two examples of 'challenging conditions'

Done, it could be an increase in competition, stress exposure or competition for example. (line 59)

- Line 59-60: Could you be more specific here? What is 'somatic maintenance' in the context of telomere (e.g. telomerase expression, antioxidant mechanisms…)?

Done, we added the example of telomerase activity and protein expression of shelterin proteins. (lines 61-62).

- Line 128: 'only broods with more than 1 chick' but you wrote in the previous sentence that all broods hade more hat 1 chick, so you basically included all broods....

Correct, thus we deleted this sentence. (lines 131-132).

- Line 166: 'To identify traits shaping inter-individual variation in body condition…..'

Done (line 169).

- Lines 175-176: But it the Null model is less than 2 AIC points above the model with the lowest AIC, all parameters from the model with the lowest AIC will be non-significant (with alpha = 5%).

We think it is interesting to present the covariates that are in the top model set because it can give an idea of the variables that may have a significant effect if we increase the sample size (the number of years of the study for example). We agree that it is not surprising that in this case the effects are non-significant, as written in the ms ("This is consistent with the fact that the null model was in the top models set (see Table S1)").

- Lines 170-176: Need to be a bit more specific here. What are the random effects? What are the categorical traits?

The random effects are described above ("In all statistical models, brood identity was included as a random factor to account for the non-independence of nestlings of the same brood" lines 163-164) and we added the precision that Hatching rank, sex and cohort are categorical covariates. (line 177)

- Line 210: Missing space (also line 294).

Done

- Figure 1 legend: For clarity purpose, please state in the legend that positive estimates correspond to longer telomere, negative estimates to shorter telomere.

Done

- Result section: Please add a table with all the effect size and 95% CI.

Done

- Figures 2 and 3: Could you please specify whether these figures control for all the other factors included in the model (i.e. factors displayed in figure 1). Could you also provide the sample size for each group on both figures 2 and 3.

The figures show the raw data. We have added the sample sizes.

- Lines 299-302: But is there an association between body mass and nestling telomere length here?

In the study of Tschumi and collaborators they did not measure telomere length and thus we cannot answer to this question.

- Lines 311-317: Could you rephrase here, I can't see a case where parents should consistently favor one sex over the other? This should ultimately lead to some forms of sexual conflict no?

We added the idea that this may be year-dependent, in relation to specific environmental conditions. (see lines 319-327).

- Lines 331-33: It is more than a non-significant effect, there is a tendency for shorter telomeres in meadow and orchards environment. I suggest to add a few sentences regarding the absence of environmental quality early in life (e.g. do meadows and orchards really represent such high-quality environments?).

Done lines 344-348.

I hope these comments will be helpful.

Kind regards,

JF Lemaître