

Review of: "Transition to siblinghood causes substantial and long-lasting physiological stress reactions in wild bonobos"

Adriana FERLAZZO¹

¹ University of Messina

Potential competing interests: The author(s) declared that no potential competing interests exist.

Dear editors,

this paper analyses how transition to siblinghood in wild bonobos impacts on stress, immune and metabolic physiologic responses, highlighting that this event is stressful beyond nutritional and social weaning and suggesting that the investigated effect is evolutionary old. The topic is very interesting and current. The manuscript is well written and structured. The references are specific and relevant.

Abstract: it is well written and recaps the information contained in the main text, but you could add more details about methods and results (animal number, significant values with measure units etc...)

Key-words: they are pertinent and consistent with the topic.

Introduction: it is too long, this section should show the state of the art about the topic, without adding conclusions or details about used methods, neither being repetitive (introduction is usually just less than one page). Here, it would be better to resume the knowledge about this theme, moving the surplus into the discussion section. The aim and the hypothesis of this study should be expressed more clearly. In addition, I think you should briefly explain the physiologic role and importance of the three measured parameters (cortisol, neopterin, T3) to elucidate those to the readers. Line 78, the reference Forbes 2010 is about birds and bees, please add a more pertinent reference about rodents.

Methods and Results: They are well structured and performed. The section "Methods" exhaustively describes the sample sizes, the procedures and statistical tests. However, I have some questions: collecting the urine samples, how did you know that a sample belonged to a subject rather than another one? Was there the possibility to isolate the subjects? Are the animals healthy? How do you assess animal status? These details should be discussed. It would be interesting if you add some recorded videoclips in the supplementary materials. Results are very well presented and joined with very detailed tables and attractive figures, adding information to the main text.

Discussion: this section is logically written and exhaustively argues about the results, presenting persuasive interpretations. However, it is too short and, as suggested before, it would be better to enrich it moving parts from the introduction. The limits of this study should be presented: you collected the urine samples between 5 a.m and 6 p.m, did you consider the circadian rhythm influence on the measured parameters? Collecting of samples was conducted during months and many years; did you take into account the impact of documented climatic changes in the LuiKotale site on both the adaptative physiologic responses of the subjects and the measured parameters? (Bessone *et al.*, 2021. No time to rest: How the effects of climate change on nest decay threaten the conservation of apes in the wild). Line 271, the reference Behringer 2009: you should specify it was saliva cortisol. In general, where not specified, please add the

species or the type of samples which the references are referring to.

Overall the paper is very captivating and since it adds useful information in the behavioralendocrinology field, it deserves to be published after minor revisions.