

## Review of “Long term analysis of social structure: evidence of age-based consistent social preferences in Alpine ibex” by Brambilla et al.

This manuscript presents a very nice longitudinal study on the social structure of adult male Alpine ibex. The data structure collected allowed the authors more of a “mile-high” view of this social structure over a 10-year period, as opposed to a detail understanding of the mechanisms contributing to the social network patterns observed across time. Given this constraint, the authors have made the most of these data rarely focused on males in a species that is relatively unknown and thus have contributed something novel to the network literature. The network approaches and supporting statistics seem appropriate, the individual-level variables matched examining attributes of males found in previous studies, and the scope of the longitudinal data impressive. Other than a few minor questions under specific sections below, I think the bulk of revision should focus on the Discussion. It currently reads quite repetitive and a bit jumbled. So, I suggest that the authors reorganize the discussion into sections addressing each of their points as listed in their conclusionary remarks (lines 704-715), reflecting the ways in which the authors set up the Methods and Results. The authors also should be careful to indicate explicitly when they are being especially speculative in the discussion (e.g., individual differences as REs and personality, months preceding death interpretation).

### Discussion

- Association Dynamics of Networks
  - Network Cohesion
  - Predictors of Association
  - Importance of individual differences (*recognizing that only a random effect was used to explore this*)
  
- Seasonal and Annual Changes to Networks
  - Ecological constraints
  - Social needs
  - Demographic influences

### Specific comments

- Change title to “Review of “Long term analysis of social structure: evidence of age-based consistent social preferences in male Alpine ibex”.
- Lines 329-333: Is there any concern that the removal of a large number of individuals for the longitudinal analysis might fail to represent the network in a given year?
- Line 433: Did the authors test whether there was a nonlinear relationship with dominance and age like they did for strength centrality?
- Lines 452-454: See comment for Line 433.
- Lines 456-458: Any thoughts as to why such a strong random effect of individual? Any data on individual attribute other than age and dominance?
- Lines 510-512, 524-526: are the data not in as form where the authors might run a community analysis (recognizing that the densities are close to 1). Could they threshold the data to augment the dyadic analyses indicating these stable associations are occurring in small groups and merge and split? I don't really see an analysis specifically supporting that observation (or mechanism resulting in the overall pattern observed directly here).