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► **To cite this version:**

Lise Habib-Dassetto, Jules Cauzinille, Mathilde Adet, Arthur Marques, Alban Lemasson, et al.. Social Ambiguity and Multimodal Interactions in Guinea Baboons. EVOLANG, May 2024, Madison (US-WI), United States. hal-04650503

HAL Id: hal-04650503

<https://hal.science/hal-04650503>

Submitted on 16 Jul 2024

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Social Ambiguity and Multimodal Interactions in Guinea Baboons

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Context

- Human Language may have evolved from our **interactional system**, which is complex thanks notably to its **flexibility**¹
- Complex social life** plays a major role in the evolution of **communication signals**²

The study of interactional abilities in non-human primates helps us **understand the evolution of communication**³. But there is no study on the **intra-specific effect of social life on multimodal interactions** in non-human primates.

Question

Do baboons adapt their interactions according to their social status and to the individual they are interacting with?



Material and Methods

18 baboons filmed for 69 h (housed at the Primatology Station of Rousset-sur-Arc, France)

With a repertoire of 68 behavioral units (e.g., body movements, gesture, vocalizations) we annotated **370 sequences of dyadic interactions** on the BORIS⁴ software following these criteria:

- 2 individuals
- 2m max from each other
- At least one directional signal⁵ during the interaction

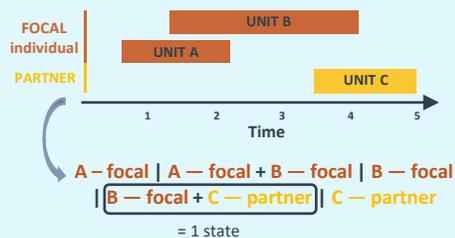


Example videos of dyadic interactions



Interactions Repertoire

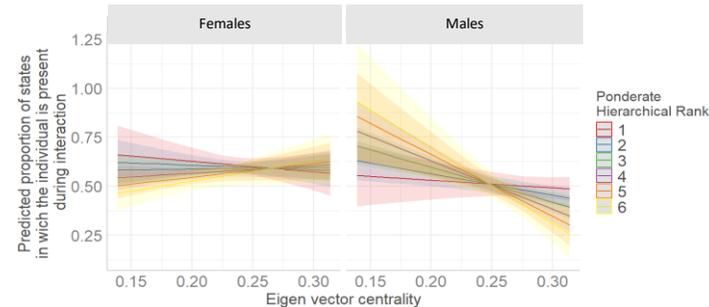
(a) Interaction sequence annotation method



Preliminary Results

At the Individual level

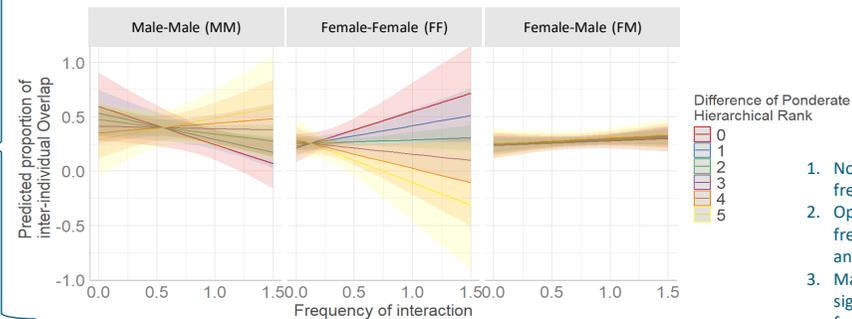
(b) Effect of Sex, Rank and social Centrality on the individual involvement during the interaction



- Low rank and low Centrality Males emit units during the whole interaction
- The more central Males are, the less they are active during the interaction (this effect is lower for high rank males)
- No effect of centrality and rank for females

At the Dyad level

(c) Effect of Sex, Frequency of interaction and Rank difference on the proportion of inter-individual Overlap



- No effect of Rank difference and frequency of interaction for FM
- Opposite effect of Rank difference and frequency of interaction between FF and MM
- Males dyads who rarely interact show significantly more overlap (even more for males of close ranks)

Conclusions

- The global structure of Interactional sequence varies as a function of the interactants' social characteristics, which shows that the interaction system is flexible
- Males of low rank or low centrality, or (on a dyadic scale) of close rank or low centrality, face many stakes (gaining status and resources) and risks (aggression by other males) in their interactions⁶. The observed flexibility of their interactions might result from a demonstrative strategy⁷ and/or an effect of stress⁸

Points out the importance of studying the global structure of interactions across social contexts for understanding the evolution of interactional flexibility

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Acknowledgements: This work is supported by the Institute of Convergence ILCB (ANR-16- CONV-0002).

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