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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**<sup>1</sup>
- Complex social life** plays a major role in the evolution of **communication signals**<sup>2</sup>

The study of interactional abilities in non-human primates helps us **understand the evolution of communication**<sup>3</sup>. 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 BORIS<sup>4</sup> software following these criteria:

- 2 individuals
- 2m max from each other
- At least one directional signal<sup>5</sup> during the interaction

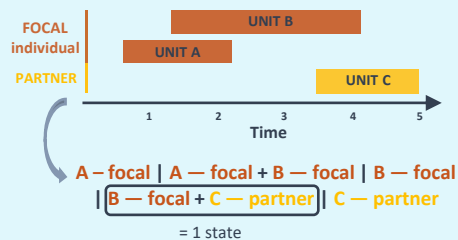


Example videos of dyadic interactions



Interactions Repertoire

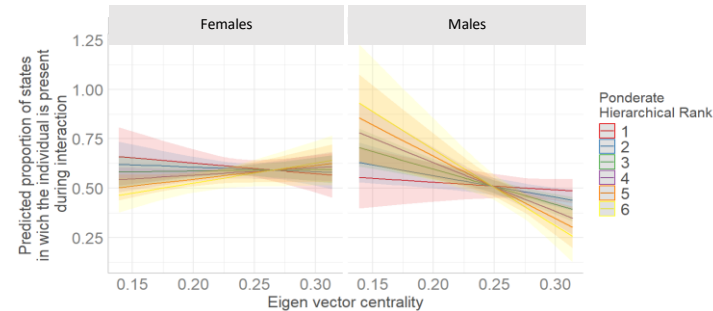
(a) Interaction sequence annotation method



## Preliminary Results

At the Individual level

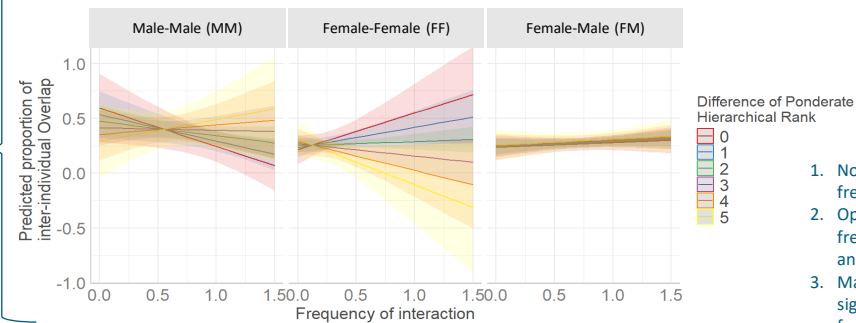
(b) Effect of Sex, Rank and social Centrality on the individual involvement during the interaction



- 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 interactions<sup>6</sup>. The observed flexibility of their interactions might results from a demonstrative strategy<sup>7</sup> and/or an effect of stress<sup>8</sup>

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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