Genomic Insights into Lineage Specific Variation in Macaque Social Behavior

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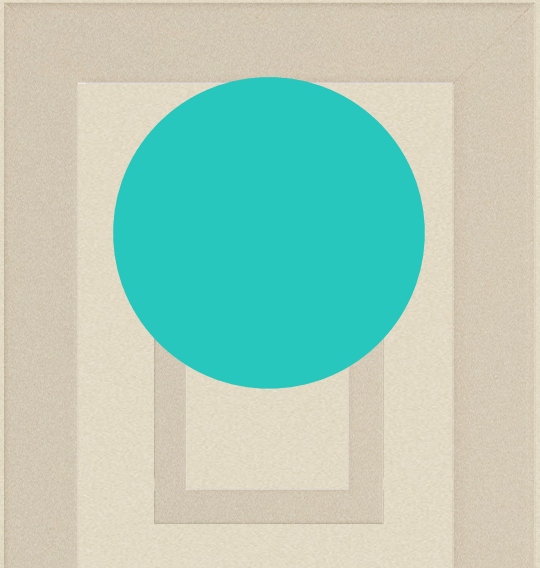
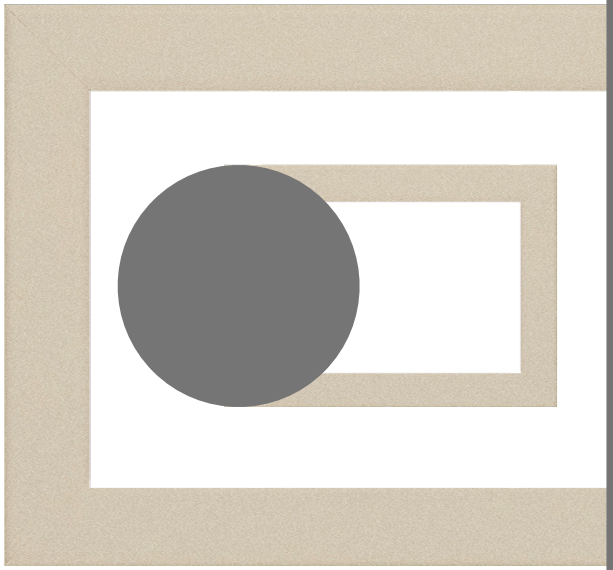


Evolution of Social Organization

The most widely accepted socio ecological model assumes that:

- Predation pressures determines group size
- Distribution of resources determines rates of competition



Diversity in Macaques

Dominance Styles

There are no patterns that correlate ecological resources with the variation in Macaque dominance styles that we observe

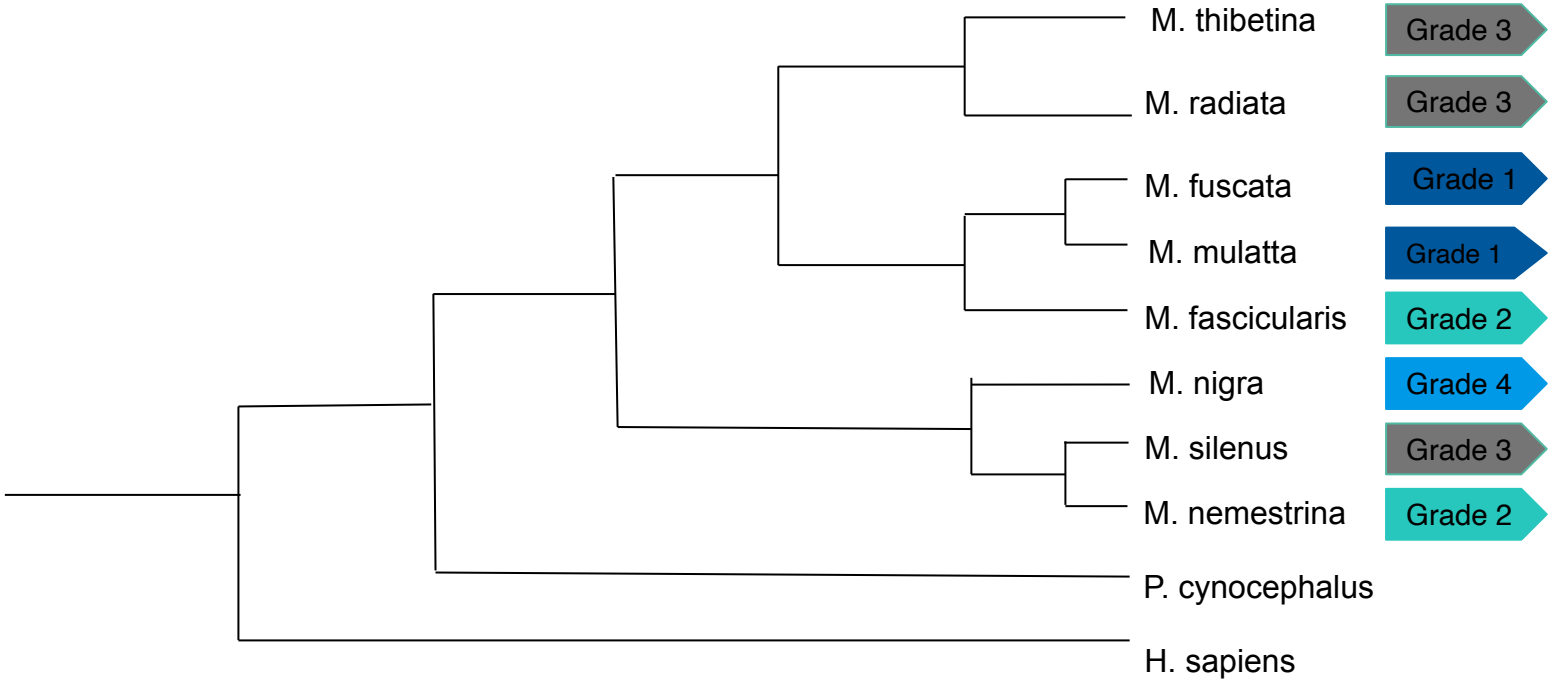
Scaling of Macaque Social Styles

Grades 1-2

Higher aggression rates- less social tolerance

Grades 3-4

Higher rates of tension reducing contacts- more social tolerance


M. thibetina
Grade 3
M. radiata
Grade 3
M. fuscata
Grade 1
M. mulatta
Grade 1
M. fascicularis
Grade 2
M. nigra
Grade 4
M. silenus
Grade 3
M. nemestrina
Grade 2
P. cynocephalus
H. sapiens

STUDY OBJECTIVES

Literature Review

Create a comprehensive list of primate social genes

Map and Process Samples

Run analyses on samples to prepare them for selection analyses

Selection Analyses

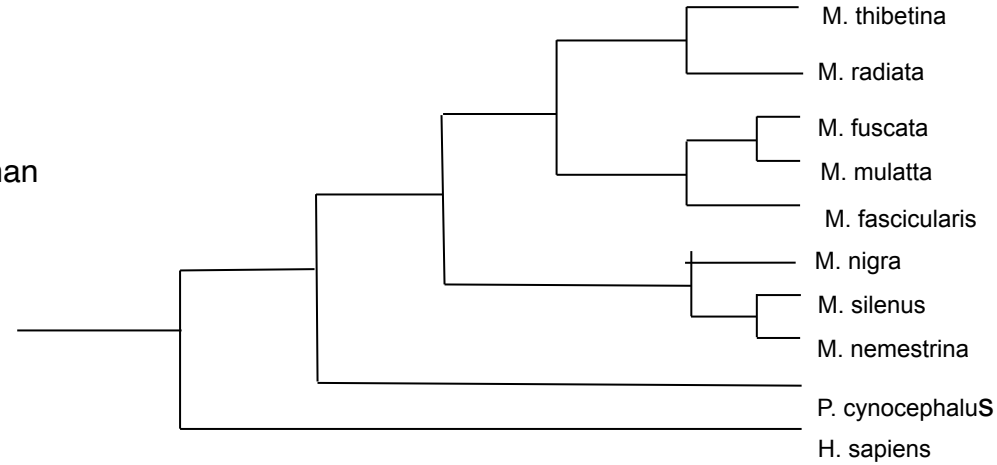
Test for positive selection

Social Genes

AVP	DRD2	OXTR	TPH2	JAG1	HTR1D	PGB
AVPR1A	DRD3	CD38	COMT	EPHA10	HTR3A	ESRRB
AVPR1B	DRD4	SLC6A4	MECP2	HTR1A	HTR3B	CRH
SLC6A3	DRD5	MAOB	CRHR1	HTR2A	NPY1R	CRHR2
DRD1	OXT	CDH13	BCL11A	HTR1E	NPY5R	NR3C1
FKBP5	KISS1R	GNRHR	GNRHR2	THRA	THRB	CNR1
CNR2	TPH2					

Methods

- 8 Macaque species samples, 1 baboon, 1 human
- Map to reference genome
- Fastqc and Multiqc for quality assessment
- Aligned using BWA
- Variant calling
- Positive Selection Analyses using Hyphy
    - Data is still being analyzed



CONCLUSIONS

1 Positive Selection

We hope to find positive selection for the social genes used in this study

Implications 2

Better our understanding of primate behavior and how phylogeny plays a role in primate social systems

REFERENCES

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