



PRIMATE SOCIAL BEHAVIOR

Fall 2020

TODAY

- Who are we? Who are you?
- Course overview and expectations
- Types of questions we'll address this semester
- A bit of primatological history

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Please interrupt at any time, for any reason

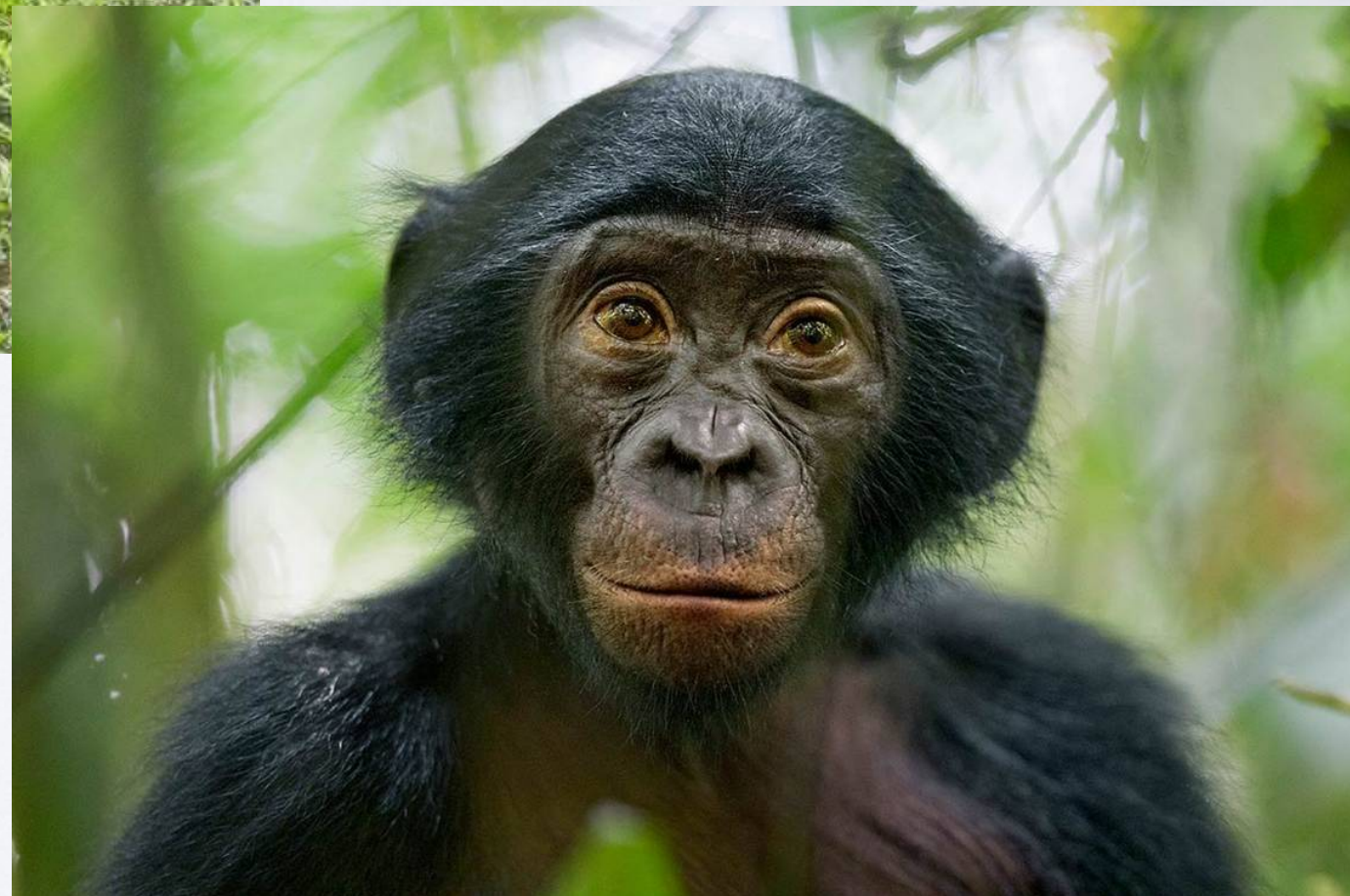


Research

- Bonobo vocal communication
- Call combinations across populations
- Meaning of animal vocalizations

Bio

Haverford, BA History, 2007
Penn, PhD Psychology, 2016





Martin Surbeck

Bio

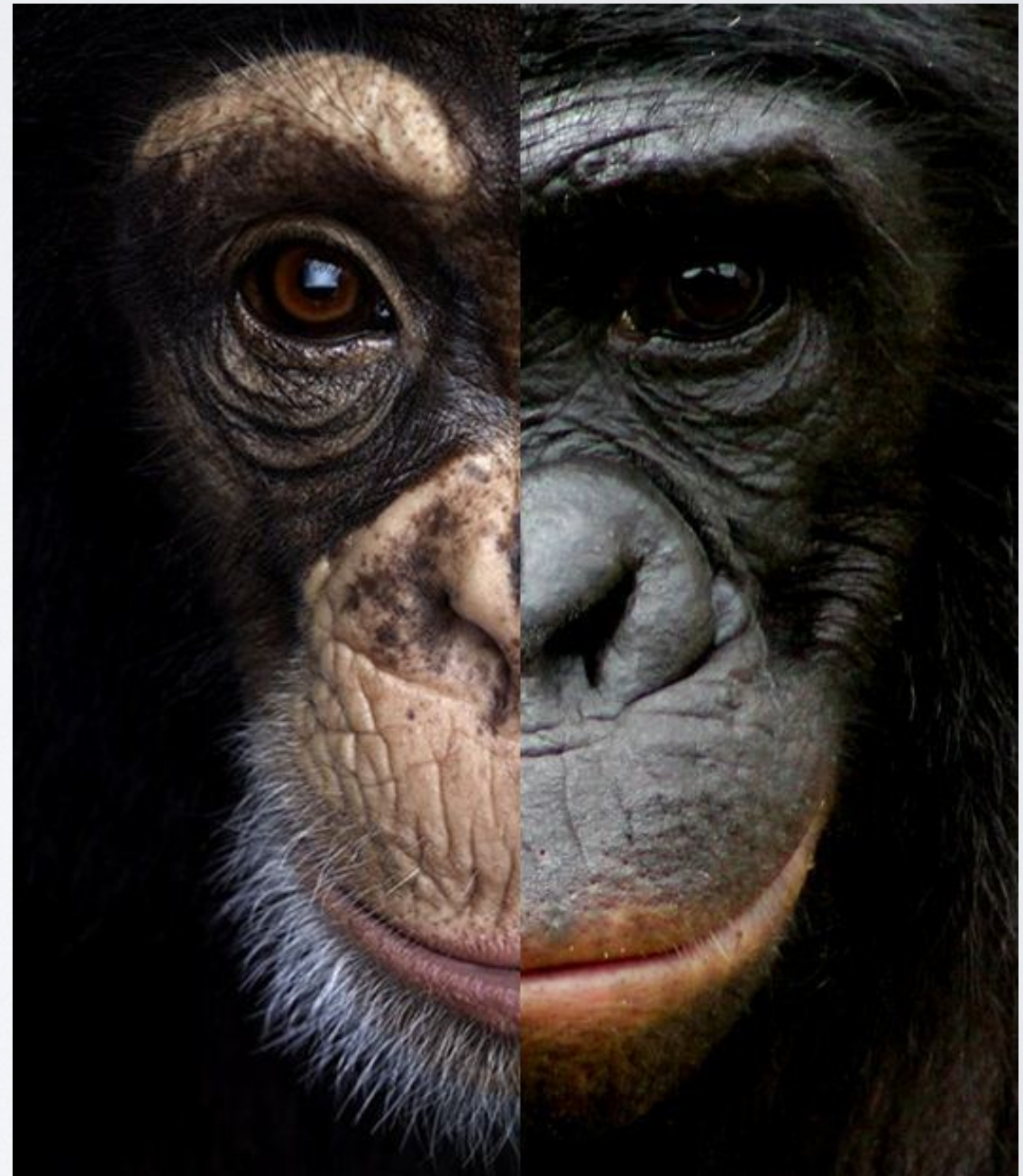
University of Zurich

Indian Institute of Science, Bangalore

Max Planck Institute, Leipzig

Research

- Competition and cooperation
- Behavioural diversity





Martin Surbeck **Bio**

University of Zurich

Indian Institute of Science, Bangalore

Max Planck Institute, Leipzig



Research

- Competition and cooperation
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WHO ARE YOU?

- **Year, concentration, background in evolutionary concepts (e.g., kin selection, individual vs. group selection, etc)**
- Last time you saw a non-human primate?
- List all the species of primate you know
- An animal that you dislike or think is untrustworthy
- Reason for taking the course

COURSE OVERVIEW

EVALUATIONS

- **8 quizzes** (40% of final grade)
 - Grading will be fairly strict
 - BUT lowest two quiz scores will be dropped
 - You will help write quizzes
 - Practice quiz at the end of class today

EVALUATIONS

- **2 papers:** 1000-1250 words, each 15% of final grade
 - Species paper (due Sept 29)
 - Proximate mechanism paper (due Oct 22)

EVALUATIONS

- **Research Project:** paper (15%) due Nov 18, presentations (15%) Nov 19 and 24
 - Ethological methods of behavioral observation
 - Research design
 - Presentation of scientific results

COURSE FORMAT

- We're trying to limit the amount of pure lecture
- Do readings and small assignments before class
- Work groups and slack channel

WHY STUDY PRIMATES?

THREE PERSPECTIVES

- Evolutionary perspective
- Primate perspective
- Human perspective

EVOLUTIONARY PERSPECTIVE

- We will use evolutionary principles to understand primate behavior
- Inversely, we will use primate behavior to test and clarify evolutionary concepts

EVOLUTIONARY PERSPECTIVE



PRIMATE PERSPECTIVE



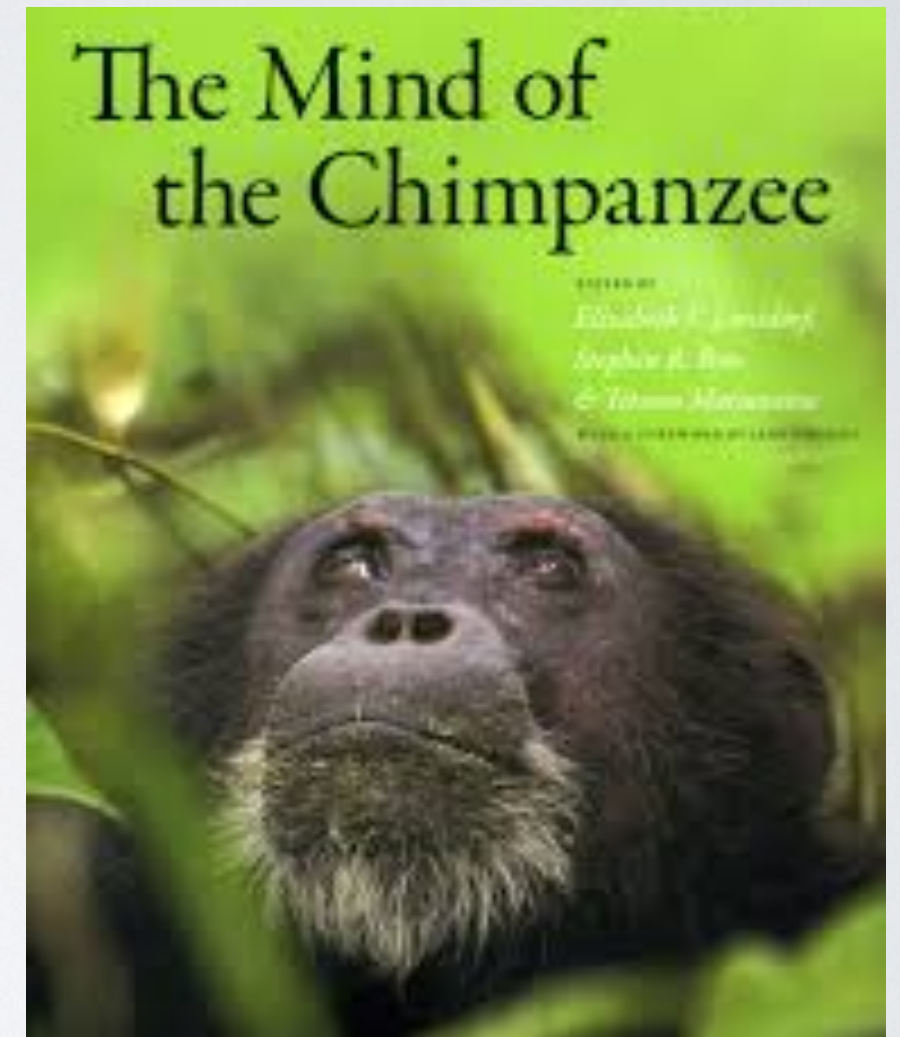
Monkey selfies?

PRIMATES ARE **NOT** 'ALMOST HUMAN'

- Just as 'evolved' as humans
- Adapted to environments that are both similar and different to human environments
- Distinct *umwelt*

WHAT IS IT LIKE TO BE A PRIMATE?

- Do primates have concepts?
- What is the nature of primate social bonds?
- Do their vocalizations have meaning?
- Do monkeys and apes have self-doubt and meta-cognition?
- What features are chimpanzees attracted to in a partner?
- How do you design studies to find out?



HUMAN PERSPECTIVE



- Reconstructing human evolutionary history
- Specifying human uniqueness
- Convergent evolution

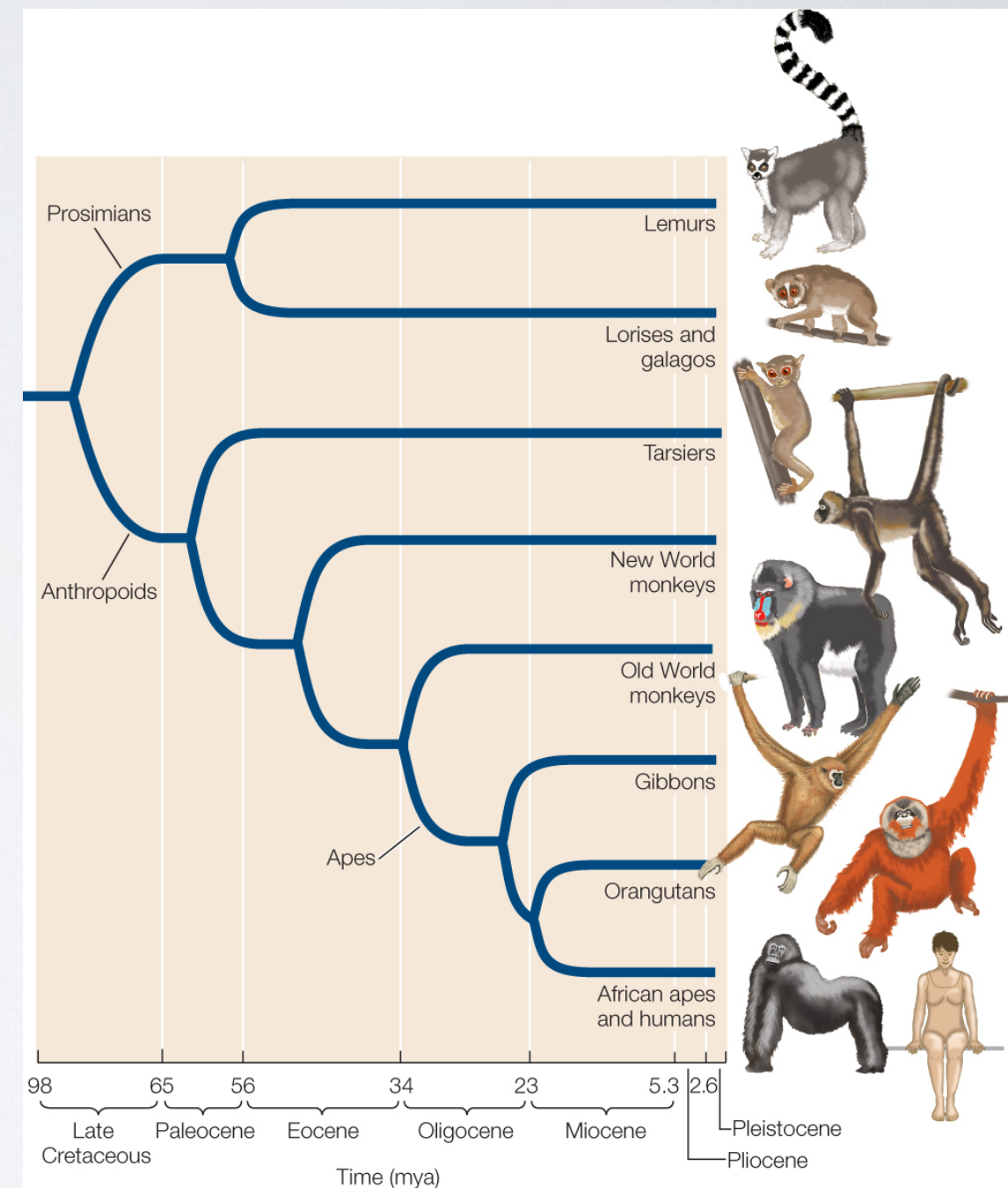
HUMAN PERSPECTIVE



- Reconstructing human evolutionary history
- Specifying human uniqueness
- ~~Convergent evolution~~

HUMAN PHYLOGENY

- Phylogenetic inference
- Reconstruction of last common ancestor with *Pan* (and other genera)
- Evolutionary history informs understanding of contemporary humans



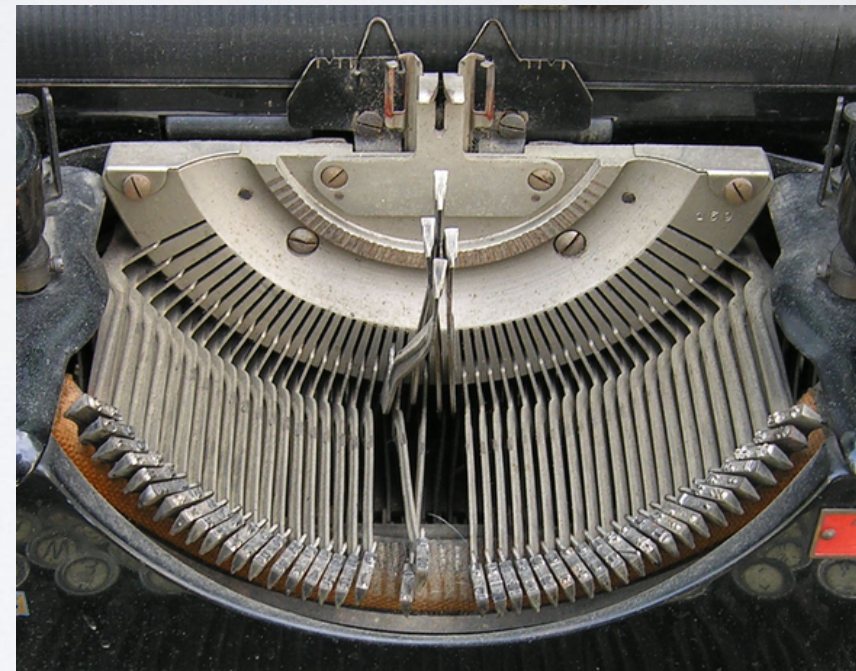
QWERTY KEYBOARD

- Why do I have to type 'A' with my pinkie???



QWERTY KEYBOARD

- Distribution of letters only makes sense in light of constraints of typewriter



NB: It is debated whether the qwerty keyboard was to accomdatoe typewriter constraints or in response to the needs of morse code transcribers.

Typewriter theory: <https://tinyurl.com/ydawcrw3>

Morse code theory: <https://tinyurl.com/ycf3usql>

HUMANS' QWERTY-LIKE FEATURES

- Fundamental attribution error
- Xenophobia
- Mating/marriage systems



HUMAN UNIQUENESS

- How are humans different from other primates?

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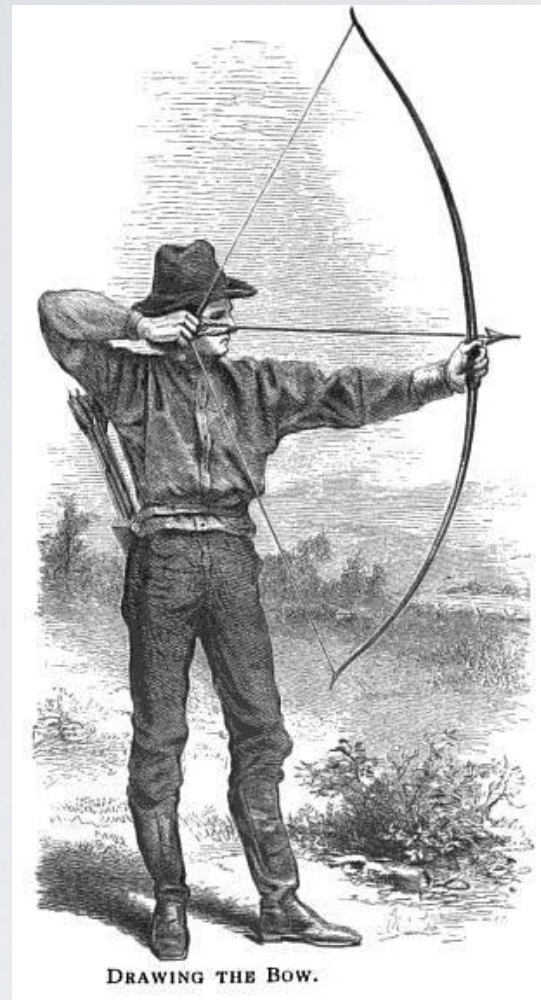


“He differeth not from a man but in his legs;
for they have no calf”

-Andrew Battle, c.1600



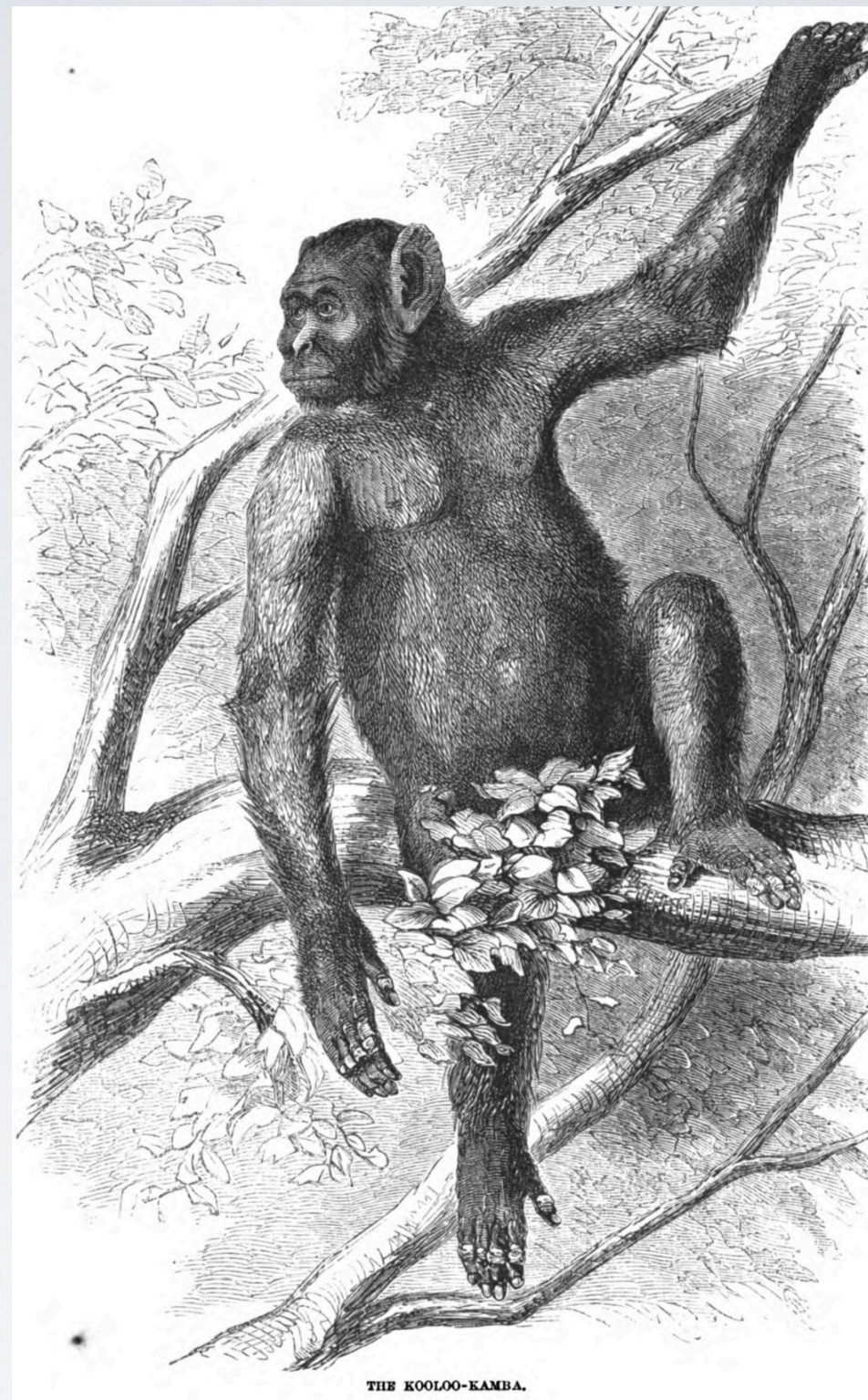
WHAT MAKES HUMANS DIFFERENT?



Bipedalism
Tool making
Hunting

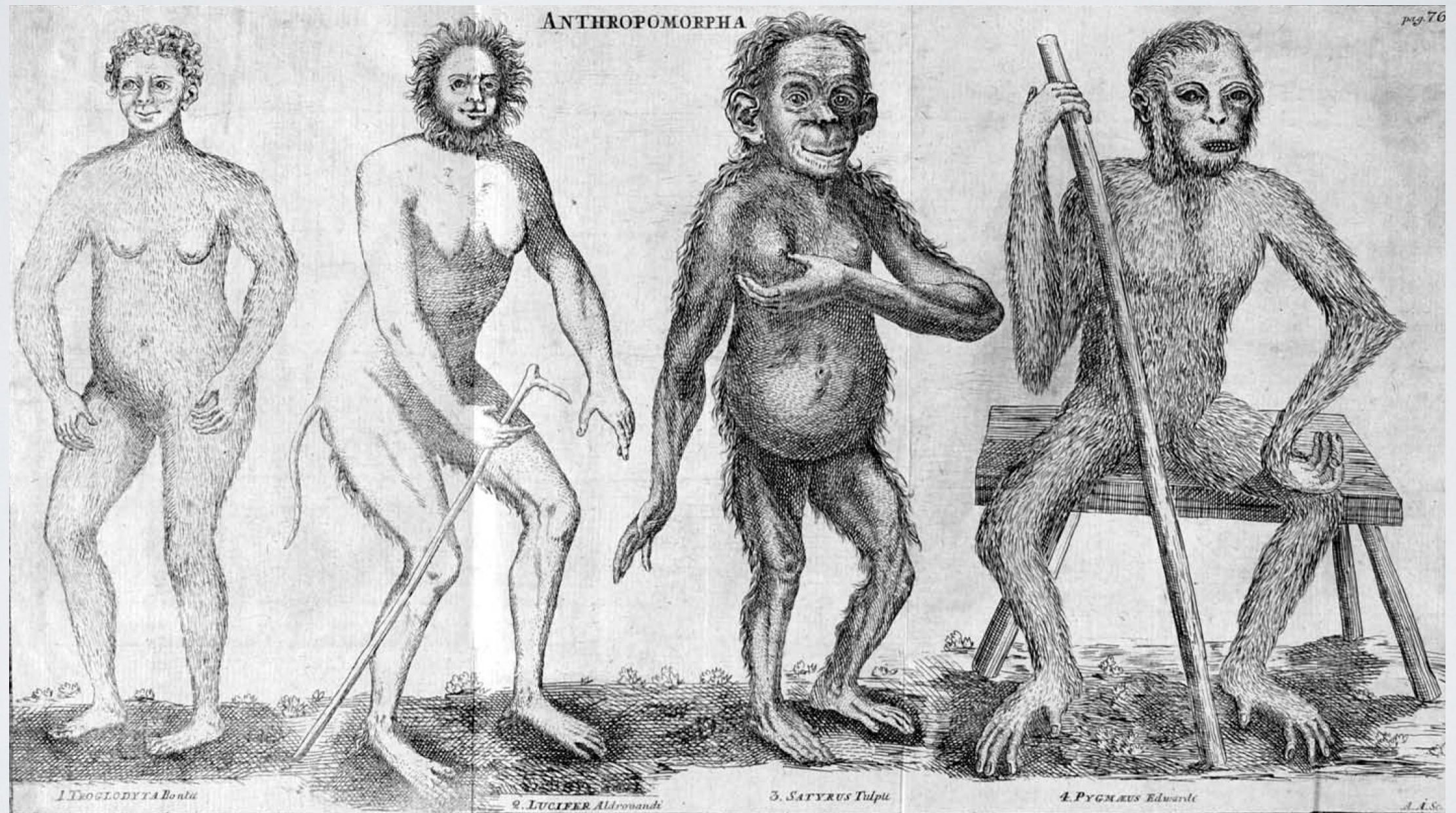


Culture
Language
Pro-sociality
Theory of mind



HISTORY OF PRIMATE STUDIES

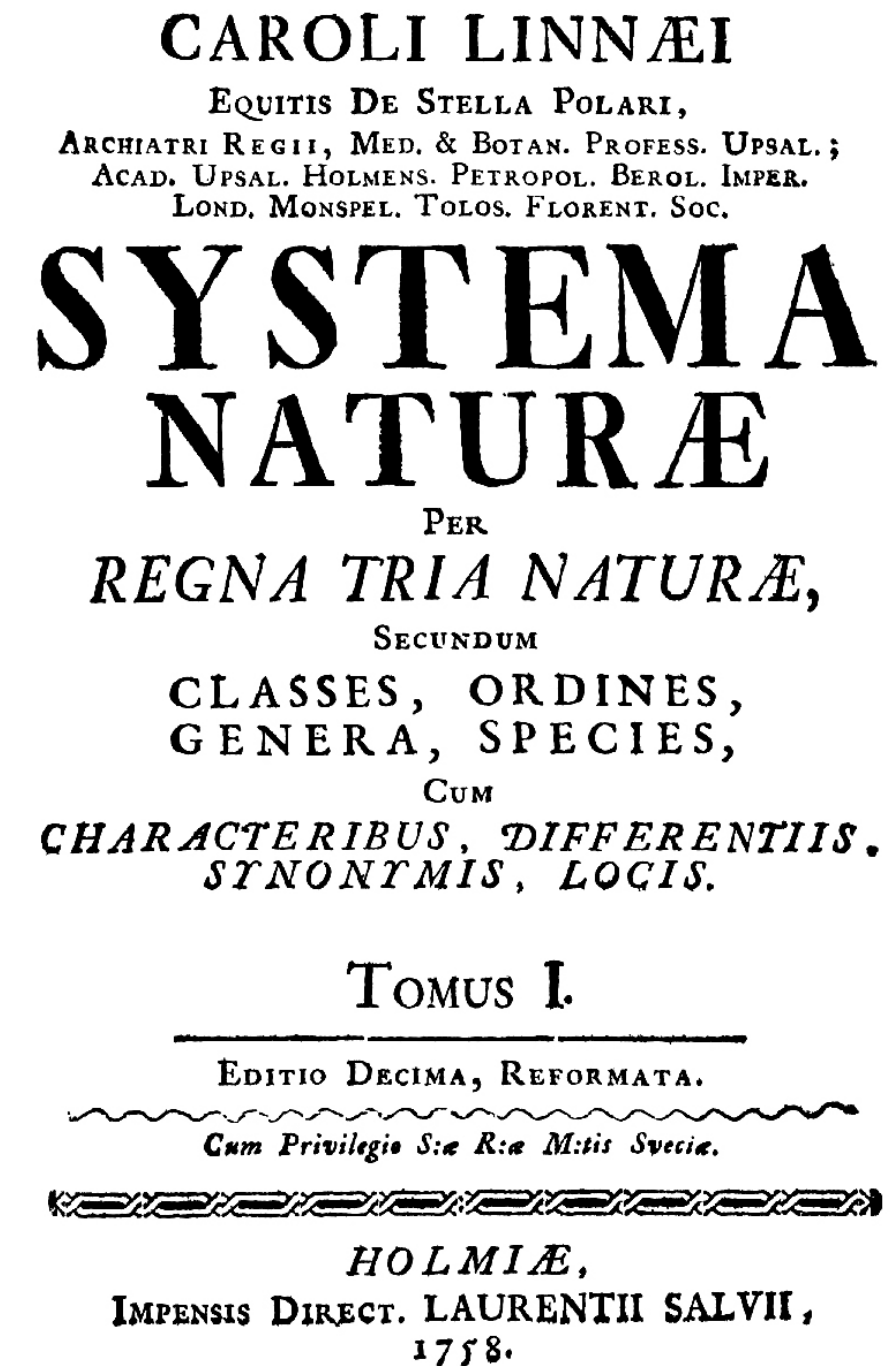
SYSTEMATIC CLASSIFICATION



Not a great start (*Systema Naturae*, 1735)

SYSTEMATIC CLASSIFICATION

- First edition of *Systema Naturae* grouped apes with humans on basis of anatomy
- Later editions put humans in own category based on 'temperament'.
- Good classification and comparison depend on research question



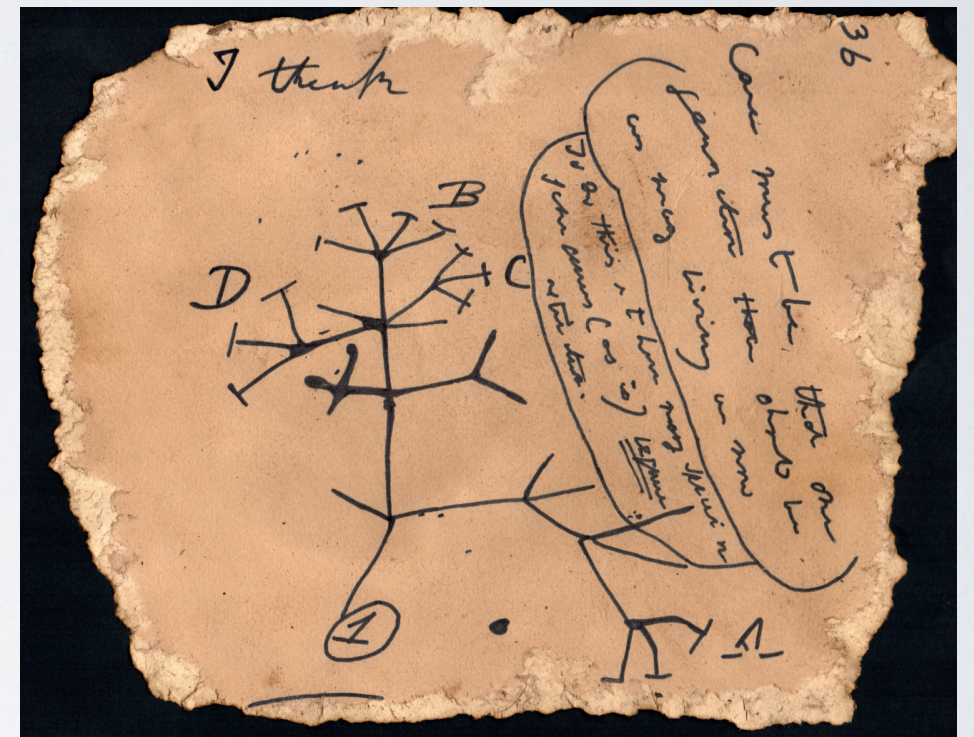
NEW EVOLUTIONARY FRAMEWORK

- Descent with modification (1859)



NEW EVOLUTIONARY FRAMEWORK

- Descent with modification (1859)
- Evolutionary tree is new framework for classification and organization of biological world
- Humans and primates share common ancestor



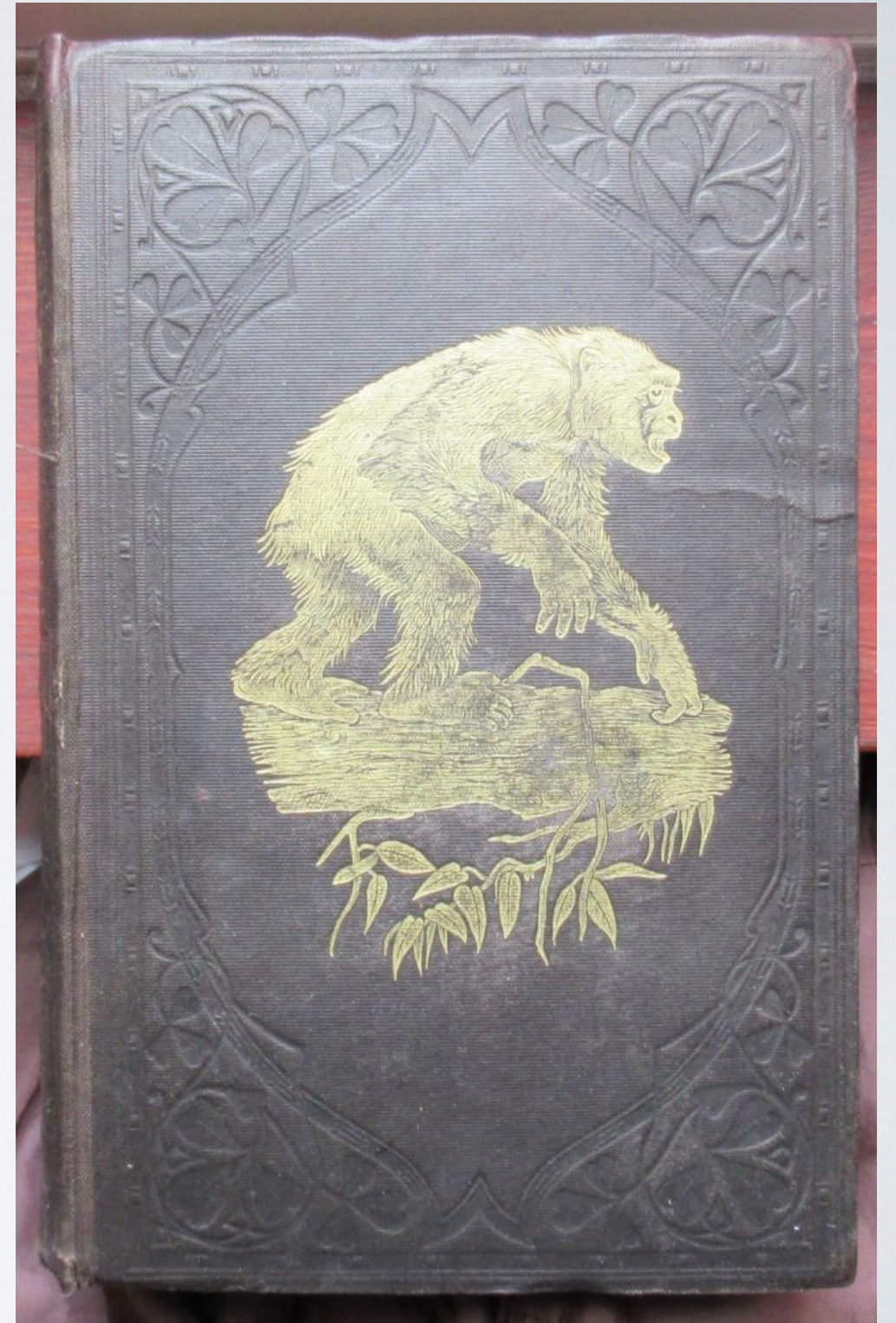
'Tree of life', sketched by Darwin in a notebook

NEW EVOLUTIONARY FRAMEWORK

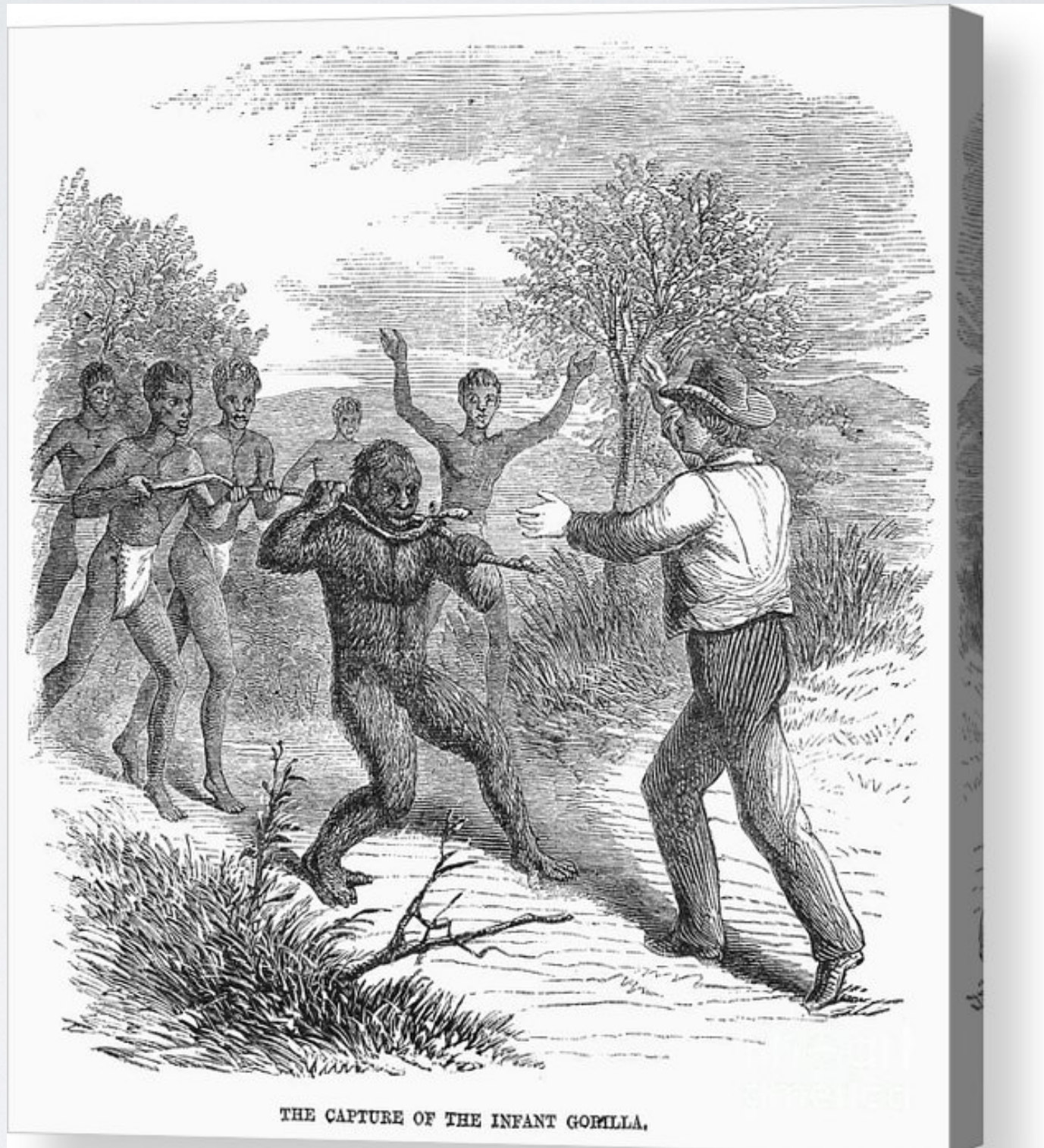
- Notions of white superiority immediately mapped on to evolutionary framework

*Explorations and Adventures in
Equatorial Africa, with Accounts of the
Manners and Customs of the People,
and of the Chase of the Gorilla,
Crocodile, and other Animals*

Paul du Chailu, 1861



Explorations and Adventures in Equatorial Africa



Explorations and Adventures in Equatorial Africa



Explorations and Adventures in Equatorial Africa

- Book is very popular; things going well for du Chailu



Explorations and Adventures in Equatorial Africa

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- Until it is whispered that his mother was black



Explorations and Adventures in Equatorial Africa

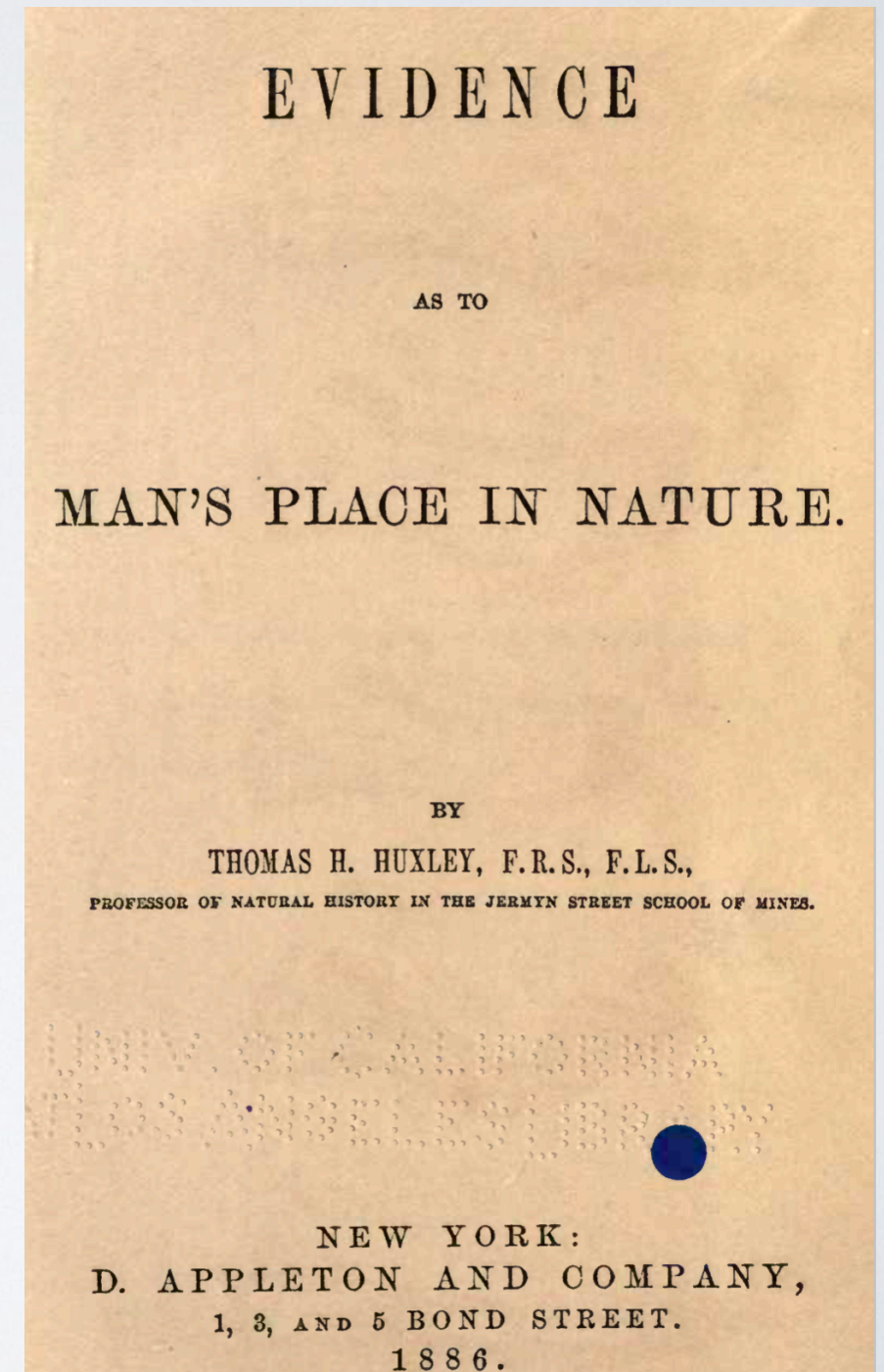
- Book is very popular; things going well for du Chailu
- Until it is whispered that his mother was black

“If it be a fact that he is a mongrel, or a *mustee*, as the mixed races are termed in the West Indies, then we may account for his wondrous narratives; for I have observed that it is a characteristic of the negro race, and their admixtures, to be affected to habits of romance.”



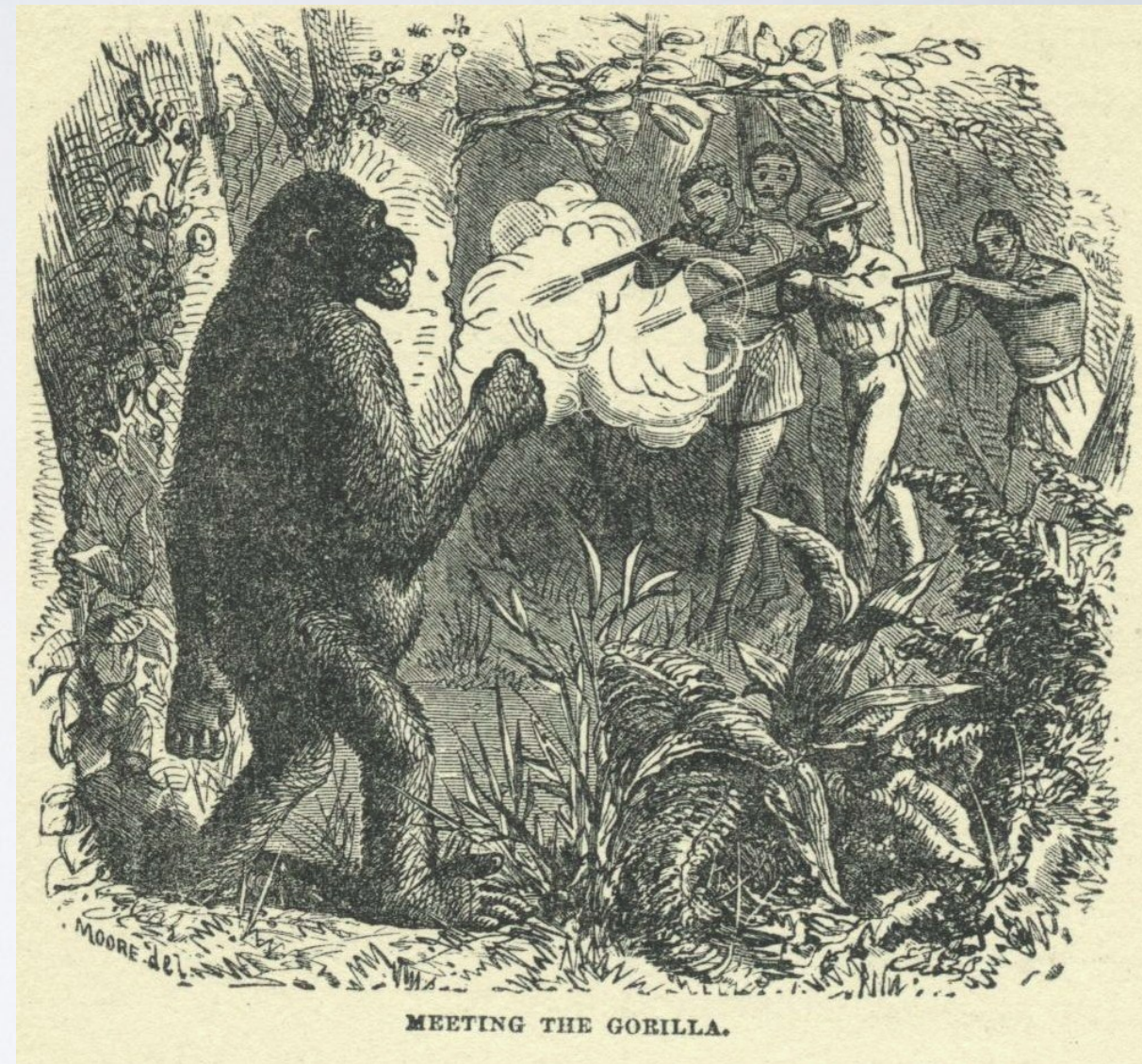
PRIMATE BEHAVIOR

- Huxley (1886) compiled written accounts of primates from the previous 200 years



OBSERVING BEHAVIOR

- Some early observations were based on apes' response to being hunted



OBSERVING BEHAVIOR

“But, though possessed of immense strength, it is rare for the Orang to attempt to defend itself, especially when attacked with fire-arms. On such occasions he endeavours to hide himself, or to escape along the topmost branches of the trees, breaking off and throwing down the boughs as he goes.”

“When about to be captured, they resist by throw- ing their arms about their opponent, and attempting to draw him into contact with their teeth. Biting is their principal art of defence.”

EXPERIMENTS IN CAPTIVITY

- Professionalization of psychology in early 1900s
- Experimental methods developed
- Kohler stuck on an island for 7 years because of WWI

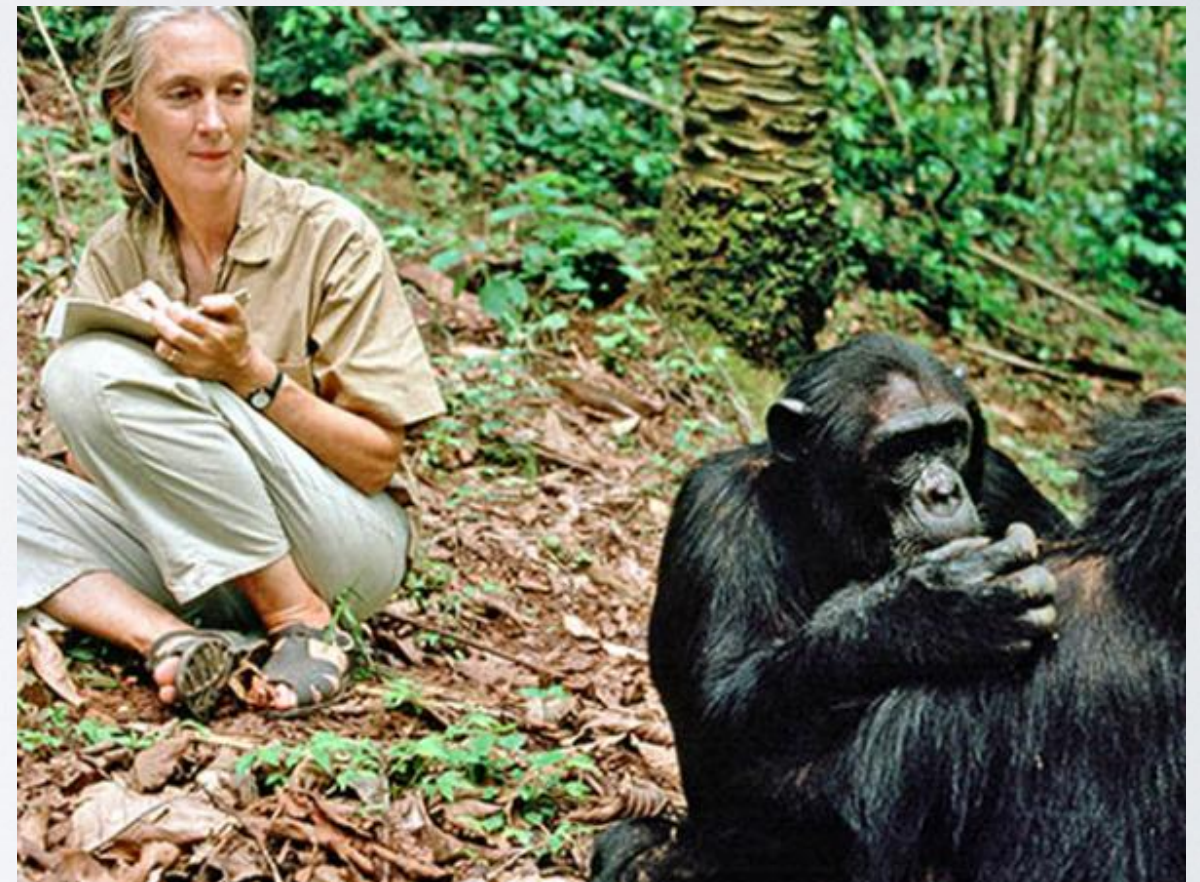


EXPERIMENTS IN CAPTIVITY



OBSERVATIONS IN THE WILD

- Scattered accounts in 1920s and 1930s
- Increased academic interest in 1940s and 1950s
- Jane Goodall et al. begin long-term studies in 1960s that continue to present



QUESTIONS?