SOCIAL COGNITION

The evolution of human cognition

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OUTLINE

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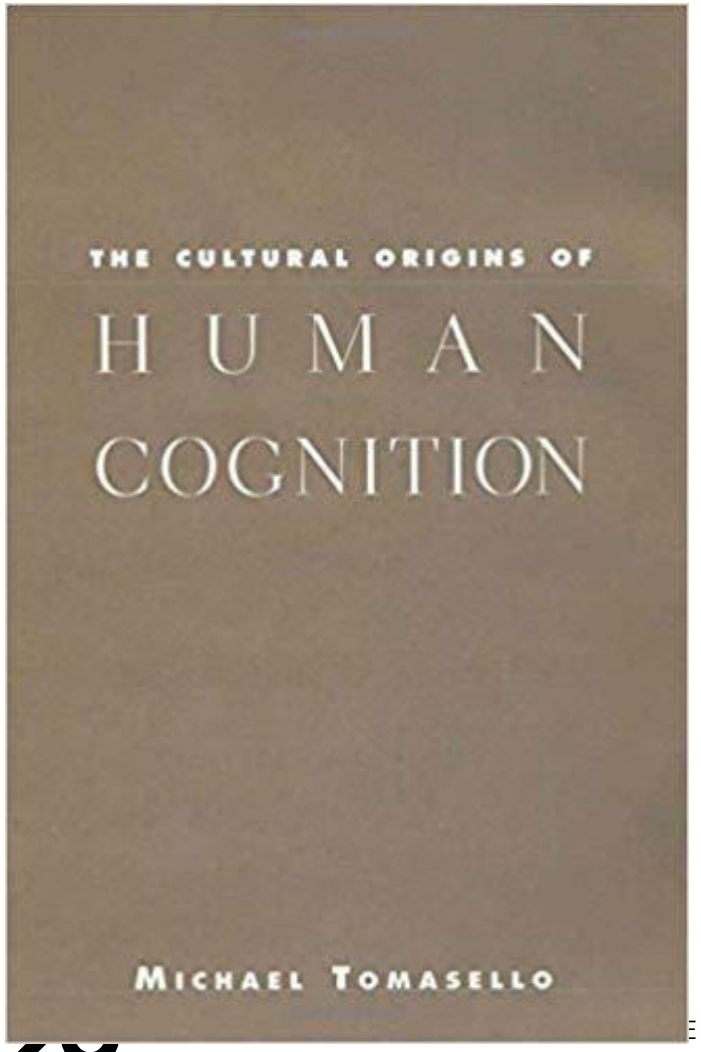
LAST WEEK

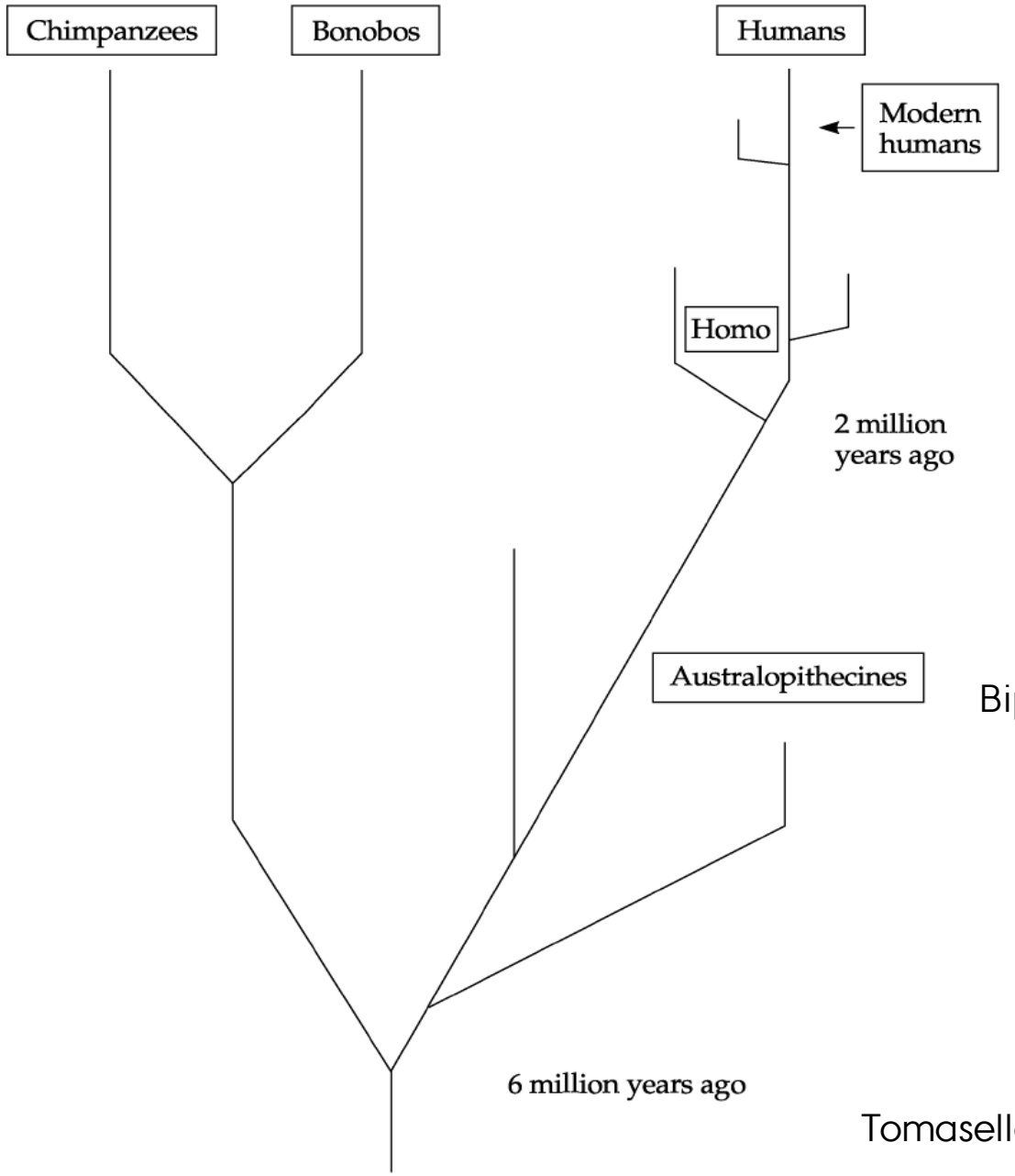
- What do you remember from last week?
- Did you get to watch the video?

THIS WEEK

How did the human cognition came to be?

TWO GREAT BOOKS ON THE TOPIC





New cognitive skills

Larger brains, stone tools

Bipedal ape

Tomasello (2009)

Figure 1.1 A simplified depiction of the time scale of human evolution.

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HOMO SAPIENS

- New set of stone tools adapted to their needs
- Use of symbols to communicate (linguistic and artistic)
- Created written language, money, mathematical notation, art
- New social practises
  - Burying the dead
  - Religious ceremonies
  - Governmental, educational and commercial institutions

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SHORT TIME

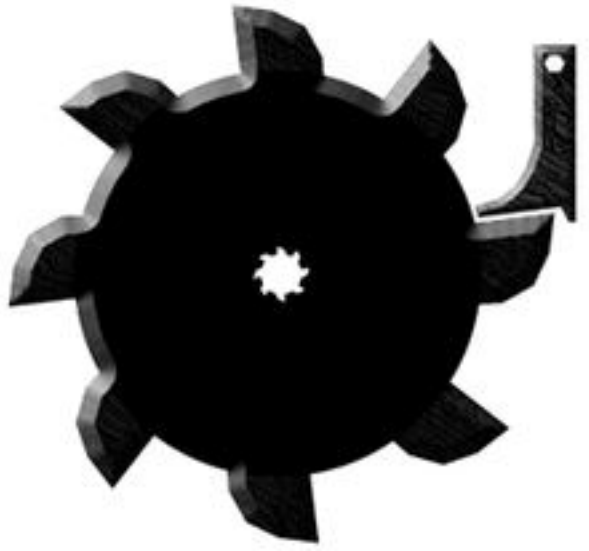
- Too little time for each cognitive skill to develop separately
- In the last 2 million years humans showed cognitive skills no different from the great ape skills
- The first species-unique cognitive skills emerged ¼ million years ago

How come humans have achieved so much in so little time?

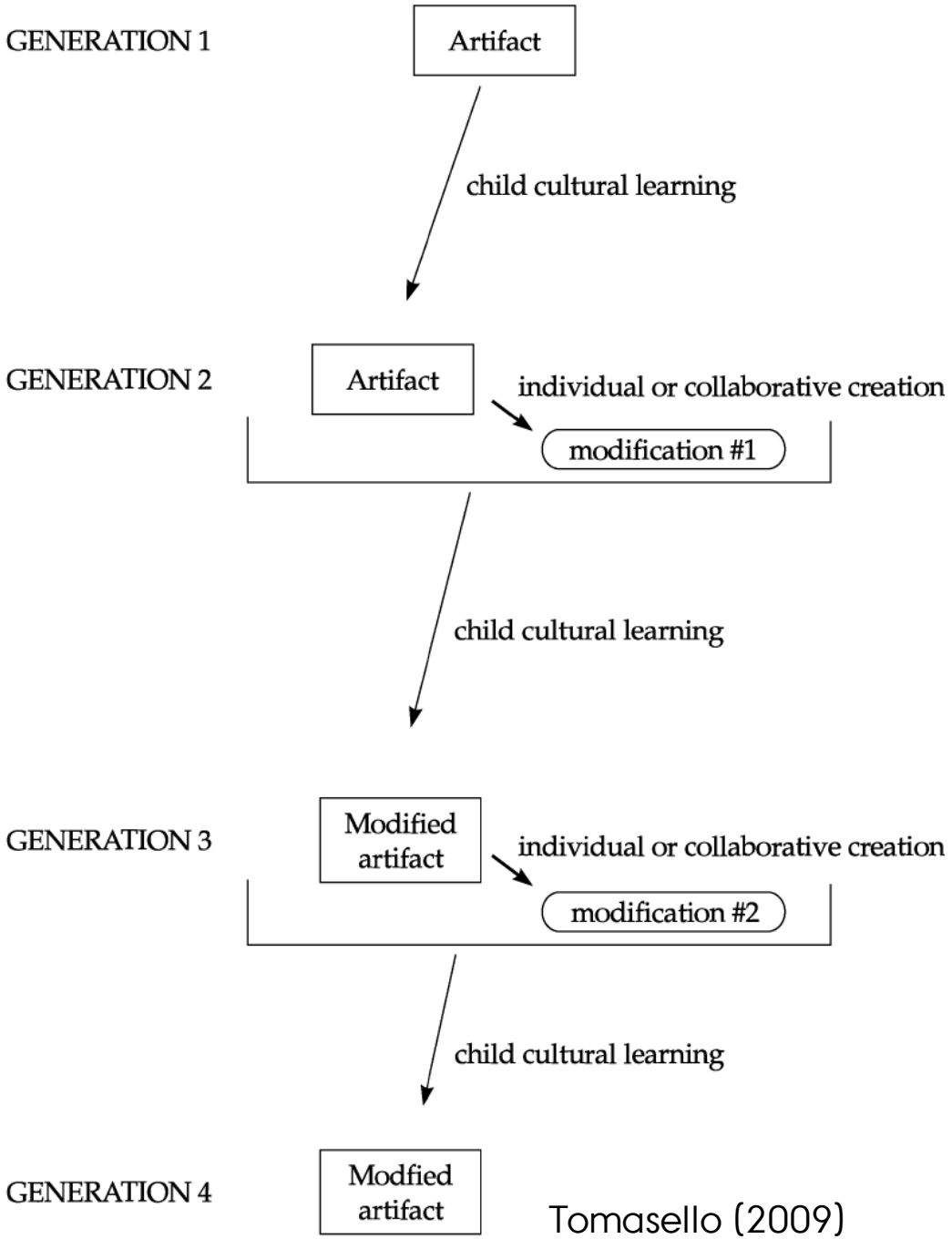
CULTURAL TRANSMISSION

- Birds mimicking the species-unique songs from their parents
- Baby rats eating food already tasted by their mothers
- Human children acquiring their native language

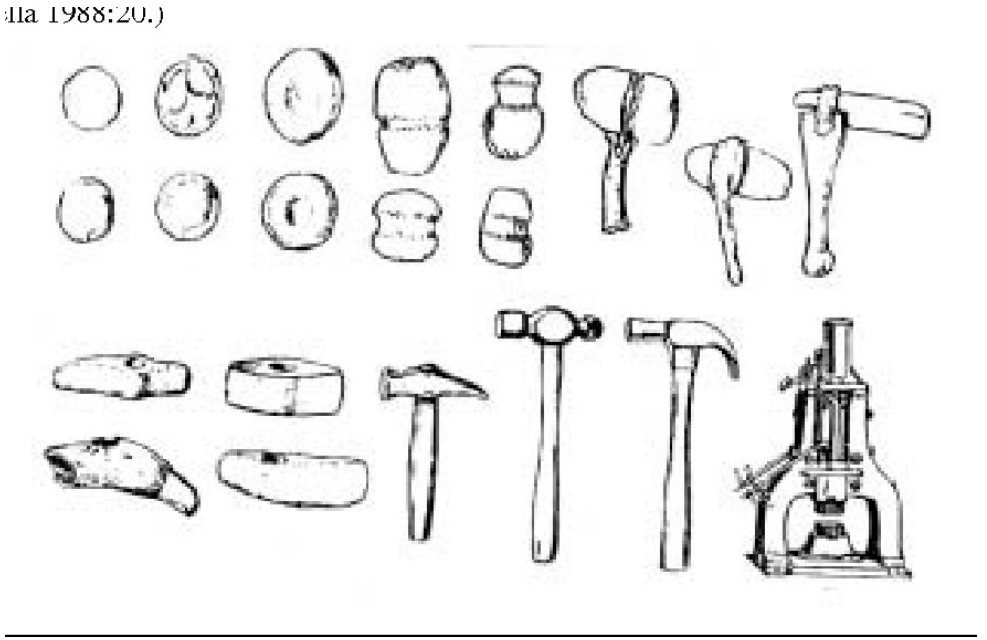
Cummulative cultural transmission in humans
- The new artefact is preserved over generations
- Improved at some point (”ratchet effect”)



THE RATCHET EFFECT



Tomasello (2009)



White & Stewaret (2002)

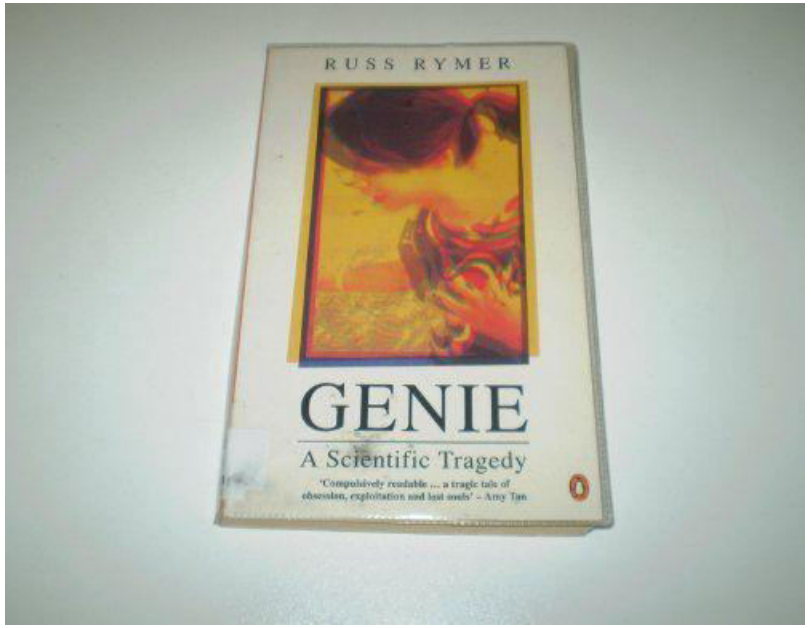
UNIQUE CULTURAL LEARNING IN HUMANS

- Imitative
- Instructive
- Collaborative

Autism: difficulties in engaging in cultural learning

STANDING ON THE SHOULDERS OF GIANTS

- Autism: lack of ability to stand on the shoulders
- “Feral child”: no shoulders to stand on



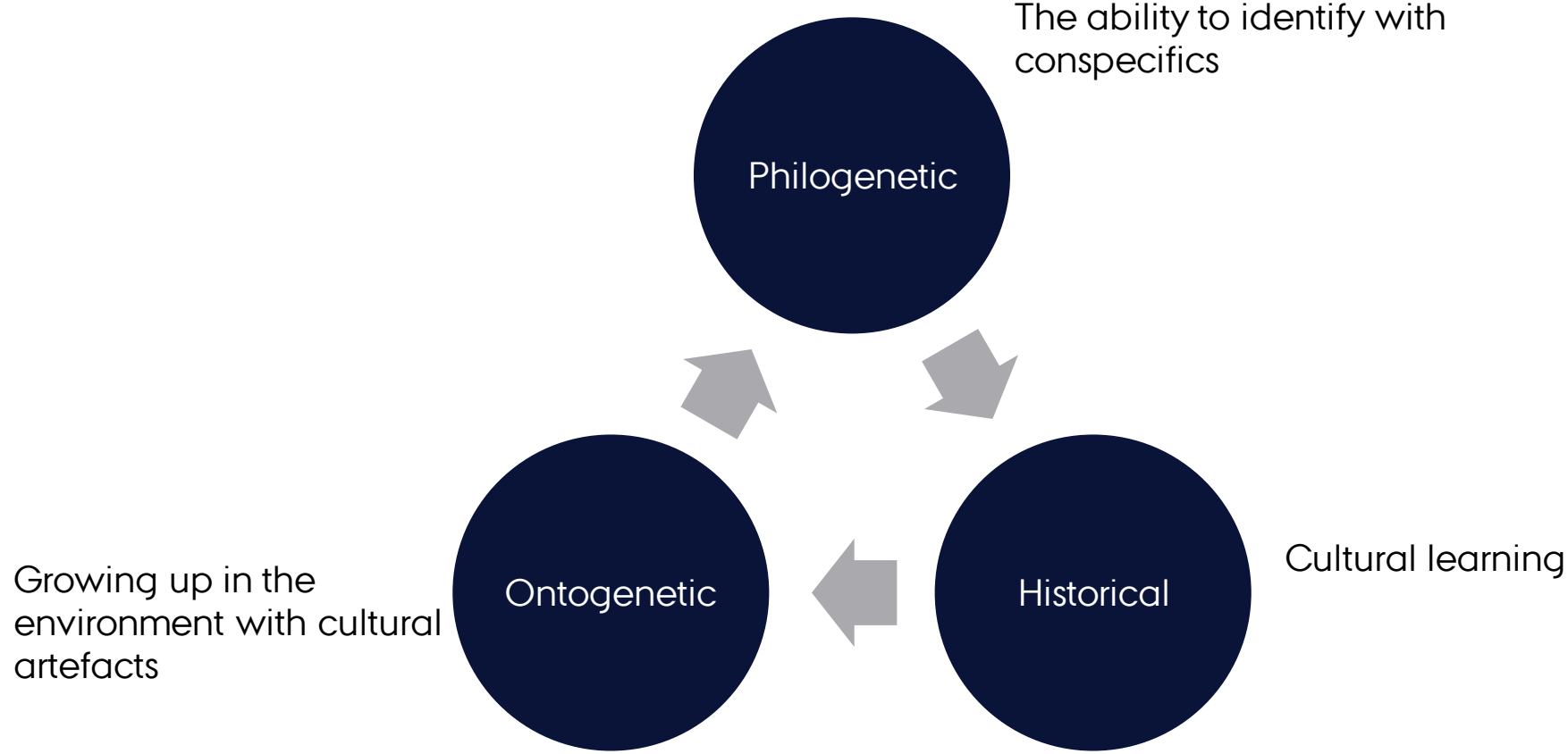
DUAL INHERITANCE THEORY

- Biological inheritance
- Cultural inheritance

ONTOGENY

- Shared attention: crucial for cultural transmission
- Shared attention: as early as nine months
- Cultural learning skills: to acquire linguistic and other communicative symbols
- Concept acquisition: e.g., a dog (running, resting, biting, etc.)
- Later: abstract concepts, metaphors, etc.
- Complex discourse interactions: theory of mind development

HUMAN COGNITION



DISCUSSION IN PAIRS

From a philogenetic, historical and ontogenetic perspective.

- What are the constraints of discussing cognition?
- What kind of knowledge are we lacking?
- How can we acquire that knowledge?
- What role does biology play in this?

STUDYING THE EVOLUTION OF HUMAN COGNITION

- Human cognition vs. non-human ape cognition
- Primate cognition vs. non-primate mammal cognition

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MAMMALS

- Have spatial cognition
- Can categorize objects
- Have numeracy
- Can reason when problem solving
- Can cooperate with conspecifics
- Recognize social constructs

PRIMATES VS. OTHER MAMMALS

- Primates recognize external social relationships they are not directly involved in

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HUMANS VS. NON-HUMAN PRIMATES

- Non-human primates are intentional and causal
- Non-human primates don't understand the world in intentional and causal terms

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Exercise: dig into the reading material and finds examples of the above-mentioned

~ 10 minutes

Go to menti.com and submit your answer

HUMANS VS. NON-HUMAN PRIMATES

- Non-human primates are intentional and causal
- Non-human primates don't understand the world in intentional and causal terms
- Emulation learning vs. imitative learning
- Joint attention
- Ontogenetic ritualization
- Local enhancing

NATURE VS. NURTURE

- Think of evidence that supports the innate nature of human cognition
- Think of evidence that supports the cultural/social nature of human cognition

NATURE VS. NURTURE

Biology	Culture
Encultured ape does not talk	Encultured ape shows human-like behaviour
Children with autism lack certain social skills	Feral children do not acquire language properly
Humans and apes are able to process math	The use of math complexity is different across cultures and across individuals
Human cognition allows room for linguistic complexity	The types of linguistic complexity are different across cultures and languages

DUAL INHERITANCE THEORY

- Biological inheritance
- Cultural inheritance

EXERCISE

- Open peer grade to check the homework in pairs
- Try to help your peer to find more literature on what they are interested in
- Submit your suggestions (a paper, a book, etc.)

SUMMARY

- Modern humans came to be approx. 200 000 years ago, which is too short in terms of evolution to explain the entire development of the human society
- Cognitively and genetically, humans are not that different from other apes
- Cultural transmission may be the key different between humans and apes
- Humans and apes have shared mechanisms of social learning but apes lack certain aspects of experiencing conspecifics as intentional causal agents
- The dual inheritance theory provides a probable explanation of how human cognition came to be