

Cumulative Culture

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Why do humans have so much cumulative culture?

Mechanism: neurons fire when observing/learning from actions

Ontogeny: humans imitate and learn from a young age

Function: necessary for survival: collaborative hunting, learning

Phylogeny: we are haplorhines (Old World Monkeys), diurnal + group oriented

Study: are humans smarter than apes?

- compared adult apes to 2yo humans

- physical cognition

• space: look for reward

• quantity, addition of objects

• causality: prediction, tools

- social cognition

• social learning (imitation)

• communication: gestures, etc.

• theory of mind: other humans are conscious

Results: humans have similar physical cognition, but much better social cognition.

- humans are more predisposed to copying, even if it may not be strictly necessary (mirror neurons) whereas apes ignore 'useless' tools

Criteria for Teaching

1. Teacher modifies behavior in presence of pupil
2. No immediate return for teacher
3. Teacher encourages, provides, sets examples to modify pupil's behavior
4. Pupil acquires knowledge more rapidly
 - first observed example: ants teach walking (2005)
 - mammals: monkeys learn how to eat coconuts without getting hurt
 - more prevalent in apes

Repertoire of Cultural Transmission Strategies

- social tolerance: teacher grants learners access to close observation
- opportunity provisioning: teacher allows learners to try difficult or dangerous activities
- evaluative feedback: teacher provides positive or negative signals, commands to stop...
- social/local enhancement: learner directs attention to task
- direct active teaching: direct, abstract communication and demonstration (human only)
 - rare in non-human cultures
 - En: no social tolerance

- Vygotsky: no verbal communication in teaching
- assumption: children learn first through observation
- verbal scaffolding by adults (WEIRD)
 - ask questions
 - encourage planning
 - praise, encourage
 - instruction and repetition to verbally introduce things
 - joint attention (eye contact)

How Humans Accumulate Culture

- highly attentive to social cues
- more abstract ideas → more direct active teaching
- imitation allows us to develop specific ideas over generations (pison recipe)
- transmission of culture in large groups more effective & accurate

How We Lose Culture

Inuit: complex culture to survive harsh northern environment

- 1820's epidemic: lost oldest hunters, lost technology for kajak (snow), bow/arrow, kayak, ...
- ↳ population loss (less food, no contact w/ other tribes)
- ↳ returned when met explorers in 1862

Tasmania: migrated 50k years ago from Australia

- isolated for 12k years
- when discovered in 18th century: simplest toolkit
 - ↳ 21 tools, no fire, no fish, no warm clothing...
- compared to very complex tools of Australians: lost most culture due to isolation

Polyesian islands: brain size correlated w/ population size

★ summary: culture can be lost in small, isolated cultures

