

Naturally Cultural

Socially Transmitted Habits and Knowledge in Primates

Frans de Waal

Living Links, Yerkes Primate Center
EMORY University

Edward Tylor, 1871

Culture is:

“... that complex whole which includes
knowledge belief, art, law, morals,
custom, and many other capabilities and
habits acquired by man as a member of
society.”

Leslie A. White, 1959

“MAN AND CULTURE
ORIGINATED
SIMULTANEOUSLY

-

THIS BY DEFINITION”

Kinji Imanishi, 1952

Culture is:

“SOCIALLY
TRANSMITTED
ADJUSTABLE
BEHAVIOR”



Koshima



1953 "Imo" Discovers
Sweet Potato Washing

WHEAT WASHING



Facts about potato-washing

- Developed in 1953 by 18-month old, Imo
- Soon adopted by Imo's mother and peers
- Adopted within decade by all individuals over middle age - but not mature males
- Habit maintained after Imo

Living Links

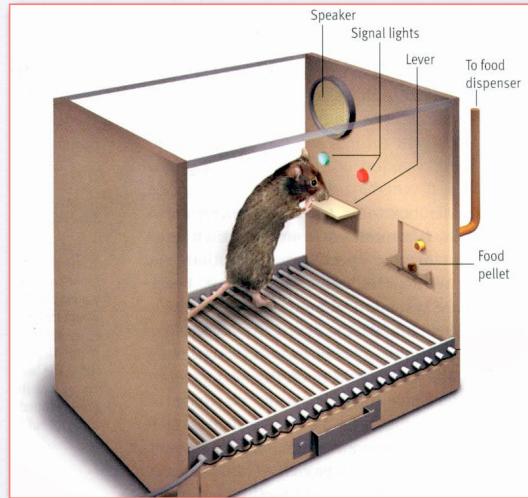
Is Reward Needed?

Why Social Learning is Truly Social

Learning Psychologists

Focus on:

- Individual
- Reward

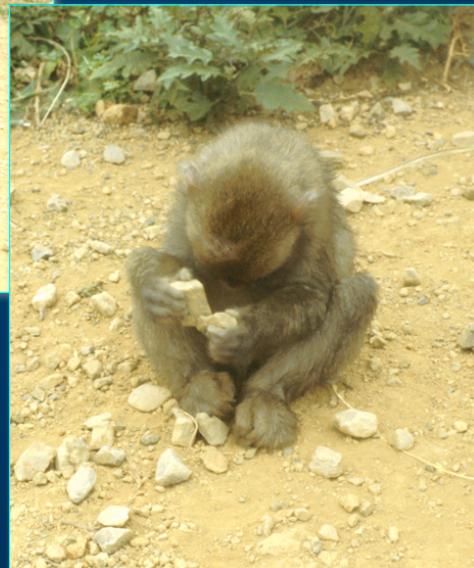


Unrewarded (!) Copying

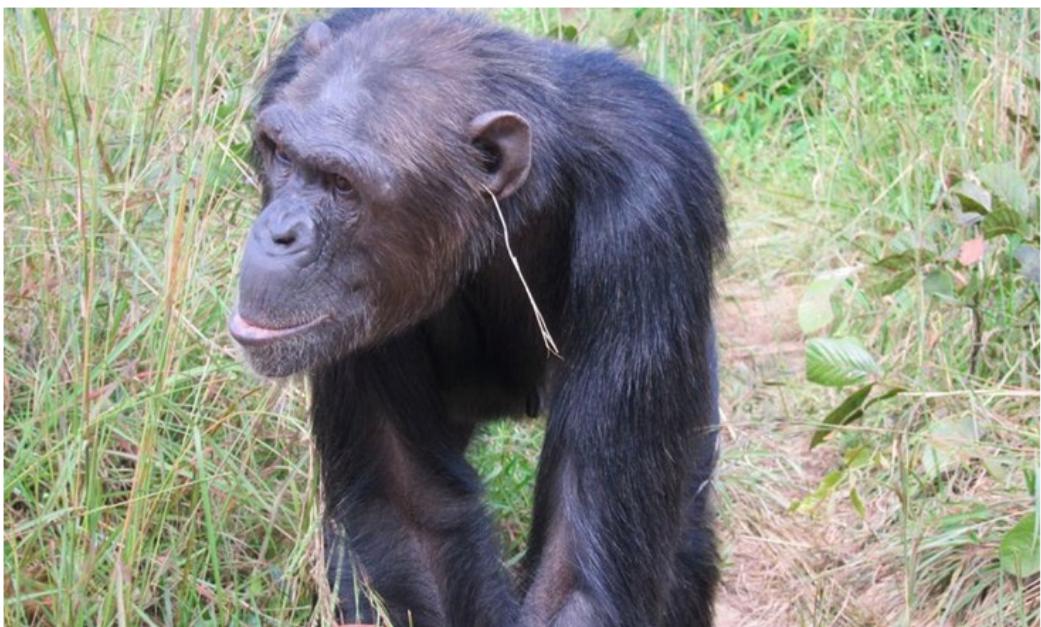
- Macaque stone-handling at Arashiyama
- Chimp nut-cracking
- Fear of snakes
- Meaning of alarm calls



Stone-handling



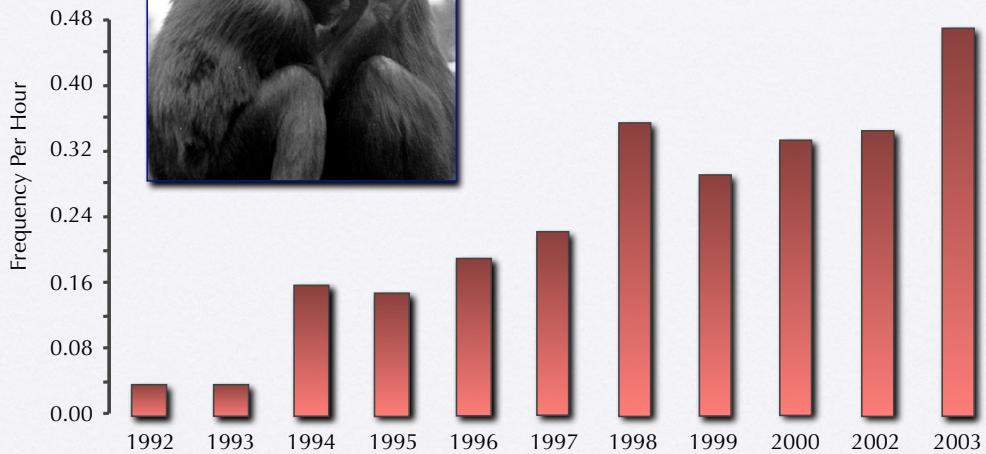
Some chimp are creating their own "ear accoutrements," perhaps the animal equivalent of a fashion statement.



(Edwin J. C. van Leeuwen et al / Animal Cognition)



Originated with one female in 1992



Bonnie & de Waal, 2006, *Primates*

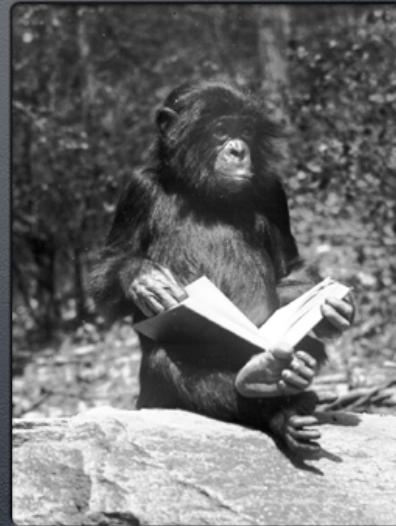
BIOL

*Bonding- and Identification-based
Observational Learning*

- Identification with certain others
- Desire to act like others (conform)
- Secondary role of reward

Do Apes Ape?

Negative results with human models



Selective Imitation of Observed Actions



FAKE MOVES

opaque
box

Can't judge
the
necessity
of actions

trans
parent
box

Can judge
the need
for all
actions

Selective Imitation of Observed Actions

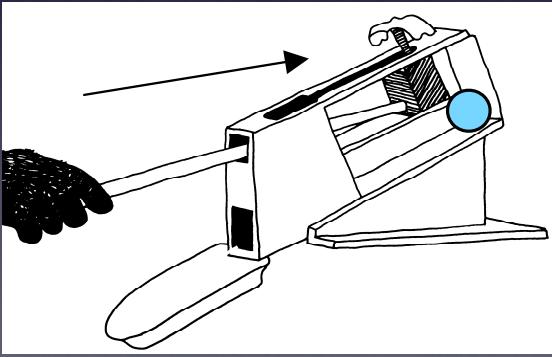
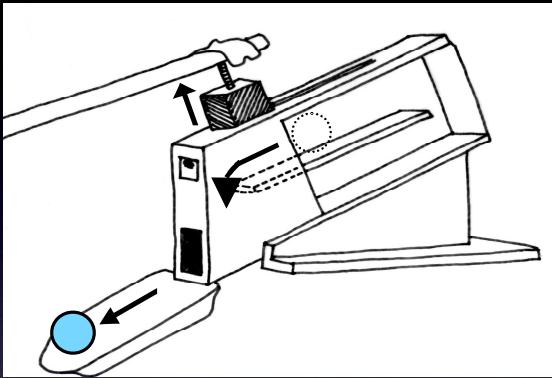


Living Links

- * Emulation: copy the goal (outcome)
- * Imitation: copy methods + goal
- * Over-imitation: Copy all actions,
incl. clearly irrelevant ones
- * Selective imitation: Copy only
actions needed for goal



PANPIPE Paradigm

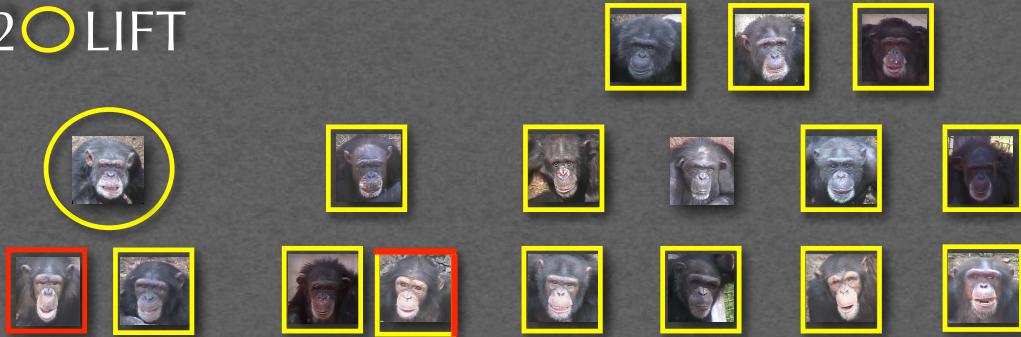


Poke

FS1 O POKE



FS2 O LIFT



Whiten, Horner & de Waal, *Nature*, 2005