**LANGUAGE ADVANCEMENT/ MIND MATURATION by means of the human language**

* Inventing language in the right environment (bows and arrows analogy)
* Dealing with symbols and conventions (e.g., words) on a daily basis and participating in “artificial systems” (language, law…)

Michael Tomasello’s shopping vs. foraging for food

* Being urged to communicate (communicative potential awoken when…) and doing so with an **intention**
* Being urged to communicate vs. urged to gesture
* Gaining social intelligence and learning language through “joint attention”

Experiments with parents’ gaining kids’ attention and cultivating it cf. kids’ vocabulary size(at 6 to 30 months)

The “stapler experiment” – pointing and the joint attention

chimps’ behavior in the stapler experiment

* Being constrained by our brain into inventing language by depending on ancestral general (rather than linguistic) cognition
* General cognition became useful to language learning
* General cognition and an urge to learn
* Learning language by depending eventually on its structure that is made evident by…

**Skill-oriented communication vs. multifunctional use of language**

Teaching chimps/ raising them among humans: Social intelligence of **apes** grows

signing and understanding vs. vocalizing and understanding

signing and understanding vs. producing “language”

communicative potential for language enforced by training vs. spontaneous communication in the wild –

So, why teach chimps?!

The matter of the **environment**: Dogs’ domestication vs. chimps

Social cognition of dogs vs. that of chimps

Conventional communication of **bees** and its limits

**Prairie dogs**’ alarm calls communication

**Vocal learning** of humans cf. song-birds

Learning vs. knowing sounds (cognitively) vs. using sounds (affectively)

**Vocal learning and the origin of speech** when cognitively ready/ becoming human:

Sounds get to be controlled and learned

Infants’ babbling happens in relation to the environment vs. rhesus and Japanese macaques’ sound endowment that is biological

Articulating - n**eural c**ontrol over complex movements to produce speech

Cognitively translating air vibrations caused by language sounds into the process of hearing

Manipulating symbols

**THEY DON’T THINK LIKE US > mind the gap between “knowledge” and “behavior”**

SPEAKING/ USING LANGUAGE designed so that…

arbitrary/ **conventional**

**efficient** thanks to its patterning **duality**, **compositionality** and **creativity**

capable of **displacement**

**MIND MATURATION and the structure of language**

Cognitive constraints on learning

Words are an ingenious invention because…

**Words and thoughts:** CONCEPTS

PATTERNS

RECURSION

Are we programmed for GRAMMAR or just dealing with “comparable communicative problems” all across cultures?

Language offers a UNIVERSAL solution to these communicative problems

***Back to the bows and arrows***