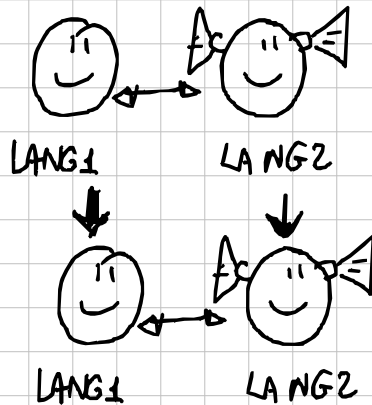


How learning and use shape evolving linguistic systems (Kenny Smith)

Artificial Language Learning



1) HOW LEARNING and USE CONSPIRE TO CREATE computational structure

Trying to reproduce the language they were trained on **LEARN** and **RECALL**

STARTING-POINT $\rightarrow$ non compositional language

" $\rightarrow$ " $\rightarrow$ "

Language For communication



Encode distinctions

Preservation of non-compositional systems

! 12 different patterns

if language is slightly compositional, it develops as a compositional language

→ Learnable and useful (compositional)

Computation ...

- Iterative Bayesian Model
- Rational Speech Act Model



$$P(e|d) \approx P(e)P(d|e)$$

DATA: MEAN-SIGNAL PAIRS

LANG: SPECIFY SIGNAL FOR MEANING

↳ WHATEVER PRIOR
↳ AVOID AMBIGUOUS UTTERANCES

→ Like in the experiments, COMPOSITIONAL LANGUAGE EMERGES

[duality of patterning, semantic typology]

Learning and use



How biases in learning create a conditional variation

Why is language like this?

↳ usually predictable through linguistic and sociolinguistic variations

→ Biases in children language acquisition

→ Transmission of language

- Smith & Wonnacott, 2010, Cognition

Presented with pictures, provided with description



ACCURATE TRANSMISSION

"PROBABILITY MATCHERS"

After generations ... it becomes PREDICTABLE!

↳ even a weak bias as an effect on final language

Generalization kills lexical conditioning?