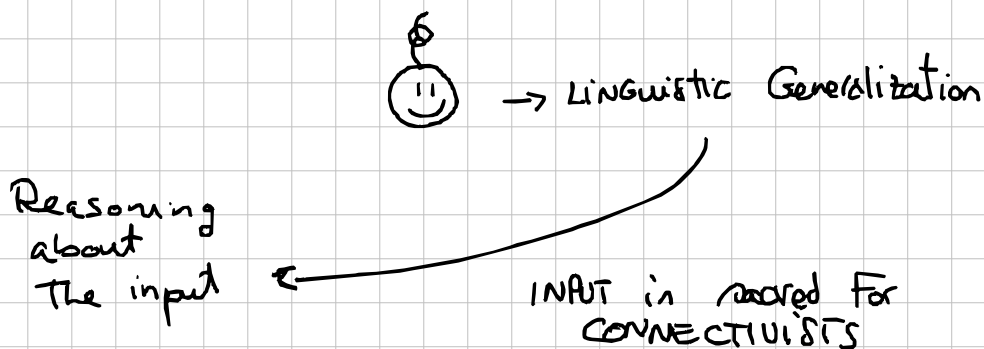


The Role of input in shaping Generalization Behaviour (Hisra Kamishkan)

Linguistic Generalization



Direct Positive evidence

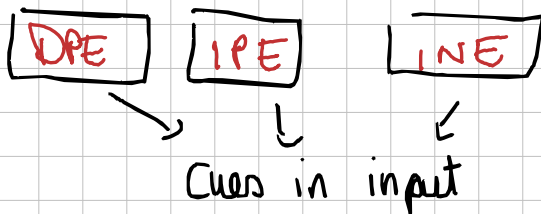
- A) give me the ball
- B) give the ball to me

Indirect Positive evidence

The wug is crying → The wug is animate

Indirect Negative evidence

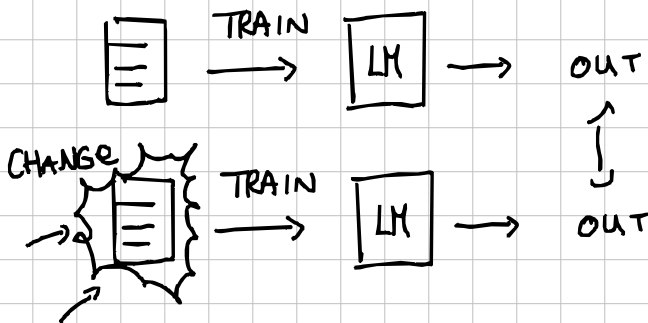
Mommy made the child giggle $\nRightarrow$ mommy giggled the baby



What if the cue didn't exist??

you cannot alter a learning experience
to understand the effect of a cue
[language deprivation experiments]
~ BC "U"

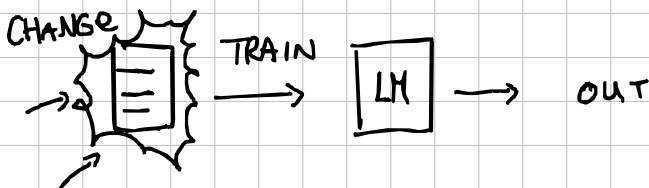
Controlled rearing of language models



EX. ART + ADJ + NUM + NOUN = AANN

• A beautiful fine days

Five beautiful days



↳ Remove all AANNs

Baby LMM Corpus (100M) $\rightarrow$ 3.4 K AANNs

$\downarrow$
POS Tagging

$\downarrow$
HUMAN JUDGMENT
ACCEPTABILITY
(≥ 7 at least)

A counterfactual AANN?

AANN $\leftrightarrow$ NAANN

$\hat{a}$ beautiful
Five days

Trained on AANN
1) Test on AANN $\rightarrow$ at chance
2) Test on AANN $\rightarrow$ improves a lot!

fine beautiful
a days

NW Clean about AANN even without finding the data in training

Indirect evidence for AANNs

1) The beautiful 5 days
 $\Rightarrow$ a beautiful 5 days

2) Plural nouns with single verb!

N-gram (4) don't show this

Learning one construction help another construction!

Penguin can dax!
Robin can dax!

>

Robin can dax
Sparrows can dax

!
All bird can dax

!
All birds can dax

Novel, Testable hypothesis on language acquisition
(Misia & Kim)

□ Cross-dative alternation

A) Δ She picked me the ball (DO)

B) Δ She picked the ball to me (PO)

!F learned exposed in construction
A)

→ det of recipient

[P:iked] recipient theme

[P:iked] theme recipient

→ det of themes

ADD [P:iked]
as a novel token

LM Learner

→ $\log P(\dots [P:iked] \dots)$

→ best generalization

DO → PO > PO → DO (2007)

Recipient: me

Theme: a big red ball with stars on it

Do: she gave me
>

Po: to me

short > long
given > new
definite > indefinite

Repeatedly using Picked in A where
B was expected is evidence against
The usage of Picked in construction B

Development

- What kind of statistical learners are children
- How to account for developmental stages?
- What phenomena do people care about?
 - DET + NOUN generalization
 - Question formation

Analytical Connectionist

- Indirect evidence is picked up by neural networks?