

Theories of language acquisition

- Innate mechanisms
- Imitation
 - Kids reproduce what they hear
 - But, children make mistakes they wouldn't hear, and children produce novel sentences
- Active attempts to learn the rules . . . plus reinforcement
 - Positive reinforcement when correct
 - Negative reinforcement/correction when wrong

Learnability

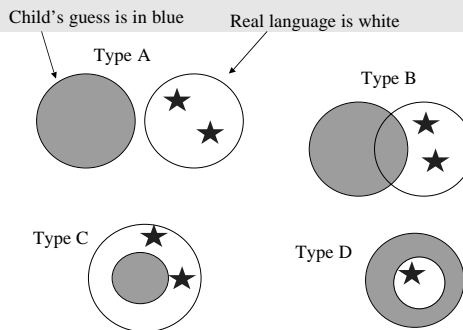
- The learnability approach focuses on the logical problem facing the language learner.
- Example of the problem: Not all verbs can appear in all sentences...

Acceptable and not acceptable

From Pinker, 1993

- | | |
|----------------------------|------------------------------------|
| • John ate. | • John hit Fred. |
| • John ate the pizza. | • Fred was hit by John. |
| • John dined. | • John resembled Fred. |
| • John dined the pizza. | • Fred was resembled by John. |
| • John devoured. | • Irv loaded eggs into the basket. |
| • John devoured the pizza. | • Irv loaded the basket with eggs. |
| • The ball rolled. | • Irv poured water into the glass. |
| • John rolled the ball. | • Irv poured the glass with water. |
| • The baby cried | |
| • John cried the baby. | |

How does a child learn this?



Negative evidence

- Negative reinforcement = negative evidence
- Evidence that a sentence is ungrammatical
- Two types:
 - Explicit correction (Don't say X, say Y)
 - Implicit negative evidence
 - Child: I goed to the store.
 - Adult: You went to the store?
- Do children receive Negative Evidence?

Brown & Hanlon, 1970

- Studied transcripts of three children at 2 points in time
- Examined three types of children's utterances:
 - Questions (What do you like?)
 - Tags (You like this class, don't you?)
 - Negatives (He doesn't like me.)
- Looked at parental approval/disapproval following this

Stage II (roughly 2.5 years)

SARAH	Correct	Incorrect
Approval	4	9
Disapproval	4	6
ADAM	Correct	Incorrect
Approval	4	3
Disapproval	2	0
EVE	Correct	Incorrect
Approval	6	19
Disapproval	3	5

Stage V (roughly 4-5 years)

SARAH	Correct	Incorrect
Approval	23	4
Disapproval	12	2
ADAM	Correct	Incorrect
Approval	13	6
Disapproval	7	1
EVE	Correct	Incorrect
Approval	33	29
Disapproval	12	15

Brown & Hanlon, 1970

- Looked at same responses, but classified them as sequiturs or non-sequiturs.
 - Sequiturs: continuations suggesting comprehension of child's utterance
 - Non-sequiturs: misunderstandings, questions, irrelevant responses, failure to respond, etc.

Percentages

SARAH	Correct	Incorrect
Sequiturs	45	45
Nonsequiturs	42	47
ADAM	Correct	Incorrect
Sequiturs	36	31
Nonsequiturs	49	62
EVE	Correct	Incorrect
Sequiturs	53	61
Nonsequiturs	27	25

Brown & Hanlon, conclusions

- Parents mostly respond to the truth of a statement, not to its grammar.
- Approval examples:
 - A: Draw a boot paper.
M: That's right. Draw a boot on paper.
 - E: Mama isn't boy, he a girl. M: That's right.
 - S: Her curl my hair. M: mm-hmm.
- Disapproval examples
 - A: And Walt Disney comes on Tuesday.
M: No he does not.
 - S: There's the animal farmhouse.
M: No, that's a lighthouse.

Brown & Hanlon, conclusions

- They do sometimes respond to the phonology of the child's utterance.
 - E: What the guy idea?
 - M: No, that's not right. Wise idea.

Do children attend to negative evidence?

- Child: Want other one spoon, Daddy.
- Dad: You mean, you want the other spoon.
- Child: Yes, I want other one spoon, please, Daddy.
- Dad: Can you say "the other spoon"?
- Child: Other. . . one . . . spoon.
- Dad: Say . . . "Other".
- Child: Other.
- Dad: "Spoon".
- Child: Spoon.
- Dad: "Other . . . Spoon".
- Child: Other . . . spoon. Now give me other one spoon?

Source: M. Braine (1971) in DI Slobin, *The ontogenesis of grammar: A theoretical symposium*

Do children attend to negative evidence?

- Child: Nobody don't like me.
- Mother: No, say "Nobody likes me."
- Child: Nobody don't like me.
[dialogue repeated 8 times]
- Mother: Now listed carefully, say "NOBODY LIKES ME."
- Child: Oh! Nobody don't likeS me.

Source: McNeill, 1966. *The genesis of language*

Hirsh-Pasek, Treiman & Schneiderman, 1984

- Parents of 2-year-olds were more likely to repeat sentences that were not correct.
 - 20% ungrammatical utterances repeated
 - 12% grammatical utterances repeated
- But this wasn't the case for 3-, 4-, or 5-year-olds

Demetras, Post & Snow, 1986

- Distinction between exact repetitions and recasts/expansions
- Mothers are more likely to ask for clarification after ill-formed sentences than error-free ones

Types of negative evidence

- Complete feedback
 - Corrective feedback for all ungrammatical utterances, and only ungrammatical utterances
- Partial feedback
 - Corrective feedback for some ungrammatical utterances, but not all; but never for grammatical utterances
- Noisy feedback
 - Corrective feedback for some ungrammatical utterances and some grammatical utterances, but in different proportions

From Marcus, Cognition, 1993

Marcus' arguments

- It's too weak
 - For a child to learn from statistical differences, they'd need to produce the same (or similar) sentence multiple times - and they don't.
- No evidence that every child gets it, or gets it at the right ages
- No evidence that it is available for all types of errors, and not just some.

Pinker's (1989) arguments

- Negative evidence must be present.
- It has to be useful.
- Children must use it.
- It must be necessary.

Bohannon & Stanowicz, 1988

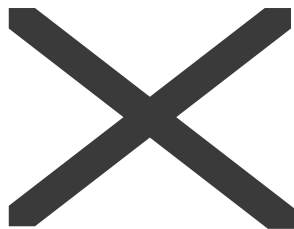
- Contrasted exact repetitions, contracted repetitions, recasts, & expansions, and different types of clarification questions.
- Contrasted parents vs. nonparents
- Contrasted different types of errors.

Farrar, 1992

- Do children pick up on these recasts?
- Corrective responses led to more child imitations than did noncorrective responses.

Morgan & Travis, 1989

- Looked only at those instances where a child overgeneralized a grammatical rule
 - Inflectional overregularizations: plural (foots), possessive (mine's), past tense (broke), etc.
 - Wh-questions



Thanks to Juan Uraigereka for tables

