

Why children overregularize

LIGN/EDS 119

Overregularization happens

- Everybody agrees on this.
- Disagreement is on what causes overregularization.
- Two explanations for what is going on:
 - Connectionist models
 - Dual-mechanism models

We will concentrate on dual-mechanism model

- Very well known
- Point of departure for many discussions of this topic
- Associated with Steven Pinker.

Steven Pinker



Steven Pinker is the Johnstone Family Professor in the Department of Psychology at Harvard University. Until 2003, he taught in the Department of Brain and Cognitive Sciences at MIT. He conducts research on language and cognition, writes for publications such as the *New York Times*, *Time*, and *Slate*, and is the author of six books, including *The Language Instinct*, *How the Mind Works*, *Words and Rules*, and *The Blank Slate*.

But the point is...

- We will be looking at one model of overregularization.
- There are others on the market.

First, some examples of overregularization



I builded a house!



I caught it!



We drived to school!



I swimmmed!

Dual-mechanism model

The two mechanisms:

Rule:

“Add -ed”

Memory:

walk

study

show

run (ran)

speak (spoke)

go (went)

Interaction of rule and memory constrained by:

- Blocking Principle
 - Retrieval of irregular form blocks application of rule.
- Retrieval failure
 - Successful retrieval takes repeated encounters.
 - Success of retrieval grows as # of encounters increases.

How this explains overregularization

- Children have had relatively few encounters with “held”, etc.,
- So retrieval is not always successful,
- So Blocking doesn’t always occur,
- So “add –ed” rule applies.

Evidence for Dual-mechanism model

- Two mechanisms: rule and memory
- Constrained by:
 - Blocking Principle
 - Retrieval failure



- We will see series of 10 pieces of evidence.

#1: Overregularization is exception

- Overregularization is common, but not that common.
- Rate of overregularization is in low single digits.
- All verbs are affected, but no verb is always affected.
- This makes sense: Children's memory of words is generally very good, so low rate of retrieval failure.

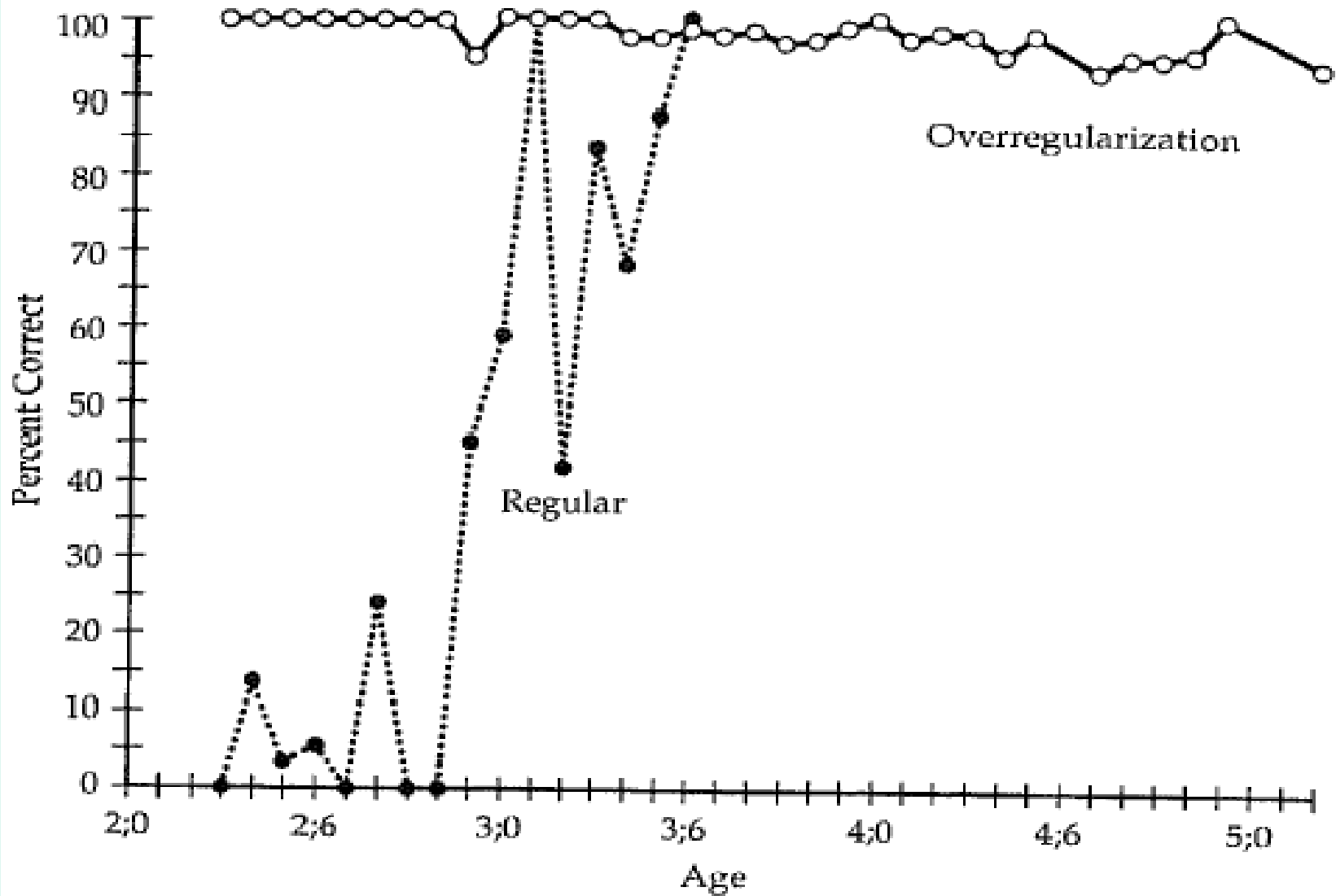


Figure 5.1

#2: Relation to parents' speech



- Children overregularize more with verbs that parents use less often.
- This makes sense: Children have fewer encounters with these verbs, so more chance of retrieval failure.

#3: Timing of past tense and overregularization

- Children start adding past tense at same time that they start overregularizing.
 - See Fig. 5.1
- This makes sense: At this point they have acquired the “add –ed” rule.

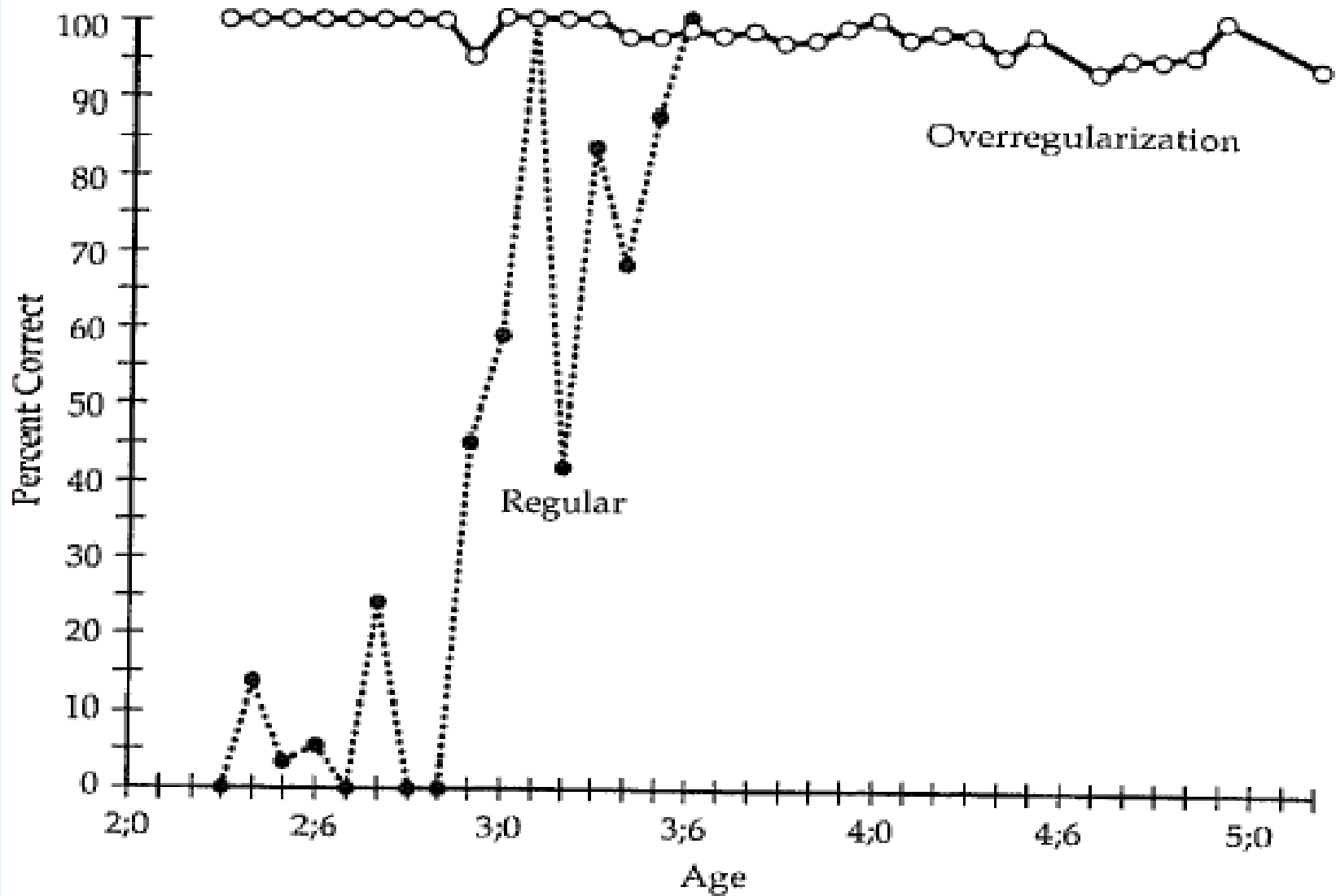


Figure 5.1

#4: Overregularization and bare stems

- Phase 1:
 - 74% He held it.
 - 26% He hold it.
- Phase 2:
 - 89% He held it.
 - 9% He hold it.
 - 2% He holded it.





- So no backsliding or drastic reorganization of the child's grammar.
- Correct forms increase as exposure increases.
- Overregularization begins to replace bare stems.

#5: Children's reaction to overregularization

- Children more likely to judge overregularized form “silly” than correct past tense form.



- This makes sense: Children have the correct form in memory.

#6: Children's reaction to adult overregularization

Parent: Where's Mommy?

Child: Mommy goed to the store.

Parent: Mommy goed to the store?

Child: NO! (*annoyed*) Daddy, I say it that way, not you.

Child (a different one): You readeed some of it too ... she readeed all the rest.

Parent: She read the whole thing to you, huh?

Child: Nu-uh, you read some.

Parent: Oh, that's right, yeah. I readeed the beginning of it.

Child: Readeed? (*annoyed surprise*) Read! (*pronounced "red"*)

Parent: Oh, yeah, read.

Child: Will you stop that, Papa?

- These reactions makes sense: Children have the correct form in memory, even if they can't always retrieve it in time.



#7: Adult overregularization

- Adults also occasionally overregularize.
- This makes sense: Adults have same mechanism as children, but have had more encounters, so retrieval is better.

#8: Adult uncertainty

- Adults unsure which form to use with low-frequency verbs:
 - dived/dove, leaped/lept, lighted/lit, etc.
- This makes sense: Encounters with infrequent verbs are few, so retrieval is not so reliable.

#9: History of English

- Common irregular verbs stay irregular.
- Irregular verbs that become uncommon turn into regular verbs:
 - Chide, geld, abide
- This makes sense: As encounters decrease, retrieval failure becomes more common, ...

#10: Contemporary English

- Very common verbs are irregular:
 - Be, have, do, say, make, go, take, etc.
- Uncommon verbs are generally regular:
 - Abbreviate, abhor, abridge, acculturate, etc.
- This makes sense: For retrieval of irregular form to be successful, you must have frequent encounters.

Conclusion

- Substantial evidence in favor of dual mechanism model.
- Children and adults use same mechanisms:
Difference is that adults have lived longer.



Conclusion

- We will explore a connectionist model of overregularization next time.

