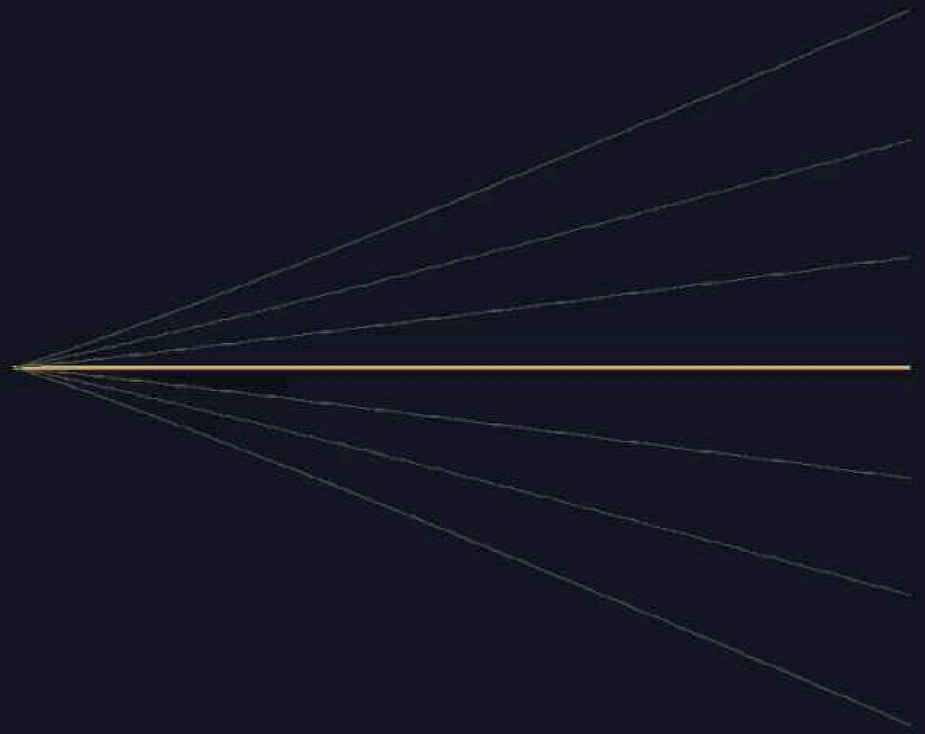
ANDERSON ACADEMY

LING 101 B · Introduction to Linguistics (Brief course)

Lecture 5 · about 6 min

Acquisition and the Brain



A library of university-level courses

Early language

- **Birth** — recognises the mother's language
- **About 6 months** — babbling
- **About 12 months** — first words
- **About 18 months** — vocabulary spurt

¶ 5.1

By about six months, babies babble, producing syllables like bababa.

Infant perception

Earlier

- At six months
- Hear all sound contrasts
- Universal listeners

Later

- At twelve months
- Tuned to their own language
- Specialists

¶ 5.2

Research by Janet Werker showed that English-learning infants lose the ability to hear some Hindi sound differences that they

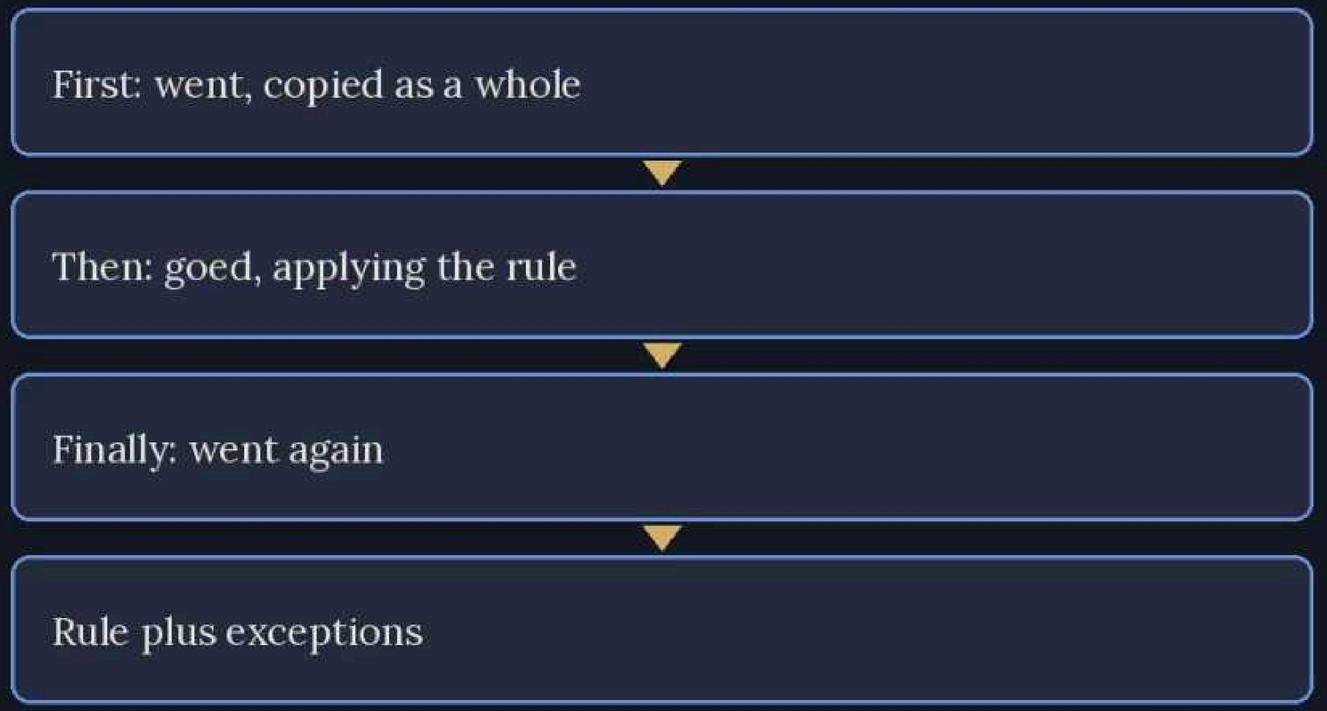
Grammar develops

- **About 2 years** — two-word combinations
- **2 to 3 years** — telegraphic speech
- **3 to 4 years** — grammatical endings
- **4 to 5 years** — complex sentences

¶ 5.3

By four or five, children use complex sentences and most of the grammar of their language,

Overregularisation



¶ 5.4

they show the child has discovered the rule add ed and is applying it too widely.

The nativist view

- Input is limited and messy
- Children reach complex grammars
- An innate language faculty
- Pinker's language instinct

¶ 5.5

The psychologist Steven Pinker popularised this view as the language instinct.

Theories of acquisition

Nativist

- Nativist
- Innate grammar
- Chomsky, Pinker

Usage-based

- Usage-based
- General learning from input
- Tomasello, Saffran

¶ 5.6

Experiments by Jenny Saffran showed that eight-month-olds can track how often syllables follow one another,

The critical period

- Lenneberg, 1967
- Easiest before puberty
- The case of Genie, 1970
- Evidence complicated by neglect

¶ 5.7

discovered in Los Angeles in 1970 at the age of thirteen, suggest that late learners struggle with grammar,

Learning a second language

Young

- Young starters
- Native-like accent more likely
- Slower at first

Adult

- Adult learners
- Faster early progress
- Accent often remains

¶ 5.8

Yet many adults become highly fluent.

Bilingualism

- Over half the world is multilingual
- Code-switching follows rules
- Language awareness
- Cognitive benefits debated

¶ 5.9

Research suggests bilingualism brings benefits such as awareness of language and perhaps some advantages in attention,

Mapping language in the brain

- **1861** Broca's patient Tan
- **1874** Wernicke describes another aphasia
- **20th century** Brain imaging
- **Today** Networks across the brain

¶ 5.10

After his death Broca found damage in the left frontal lobe, now called Broca's area.

Two aphasias

Broca's

- Broca's aphasia
- Halting speech
- Understanding largely intact

Wernicke's

- Wernicke's aphasia
- Fluent but empty speech
- Understanding impaired

¶ 5.11

They speak fluently, with normal rhythm, but their speech is often meaningless and they struggle to understand others.

Language networks

- Broca's and Wernicke's areas
- Wider left-hemisphere networks
- Sign language uses the same areas
- The right hemisphere and context

¶ 5.12

showing that these regions serve language itself rather than speech or hearing.

The Sapir-Whorf hypothesis

Strong

- Strong version
- Language determines thought
- Widely rejected

Weak

- Weak version
- Language influences thought
- Some support

¶ 5.13

A strong version, that language determines thought, is widely rejected.

Language and thought evidence

- Guugu Yimithirr: compass directions
- Russian: two blues
- Faster colour discrimination
- Effects real but modest

¶ 5.14

Russian has separate basic words for light and dark blue, and Russian speakers distinguish those shades slightly faster.

Summary of lecture five

- ✓ Stages of acquisition
- ✓ Theories of acquisition
- ✓ Critical period and bilingualism
- ✓ The brain and thought

¶ 5.15

Broca's and Wernicke's areas and wider networks support language, which influences thought modestly.