Children‘s acquisition of first language

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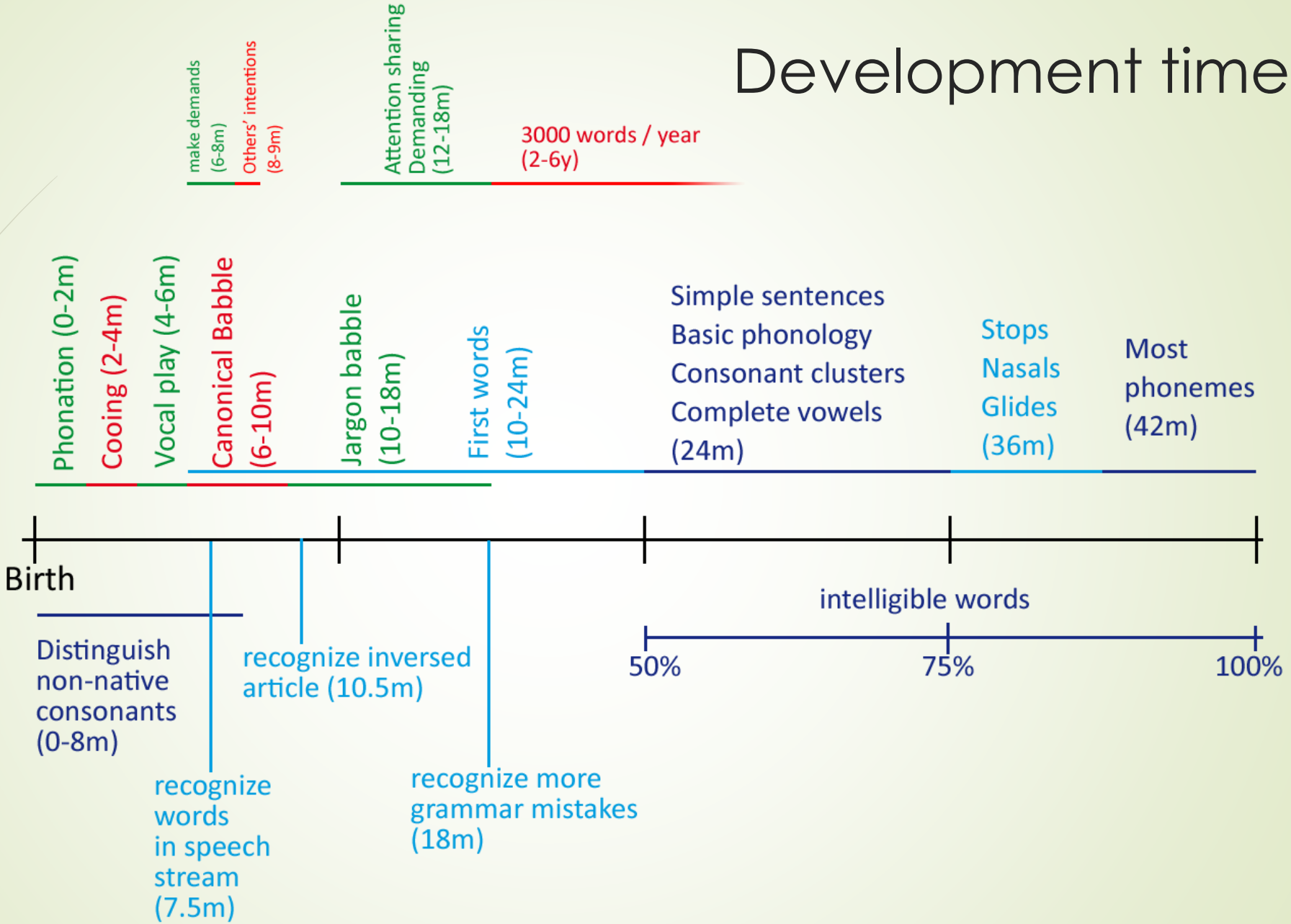
Overview

- Development timeline
- Comprehension and production
- Vocabulary and meaning
- Grammar
- Syntax
- Pragmatic and metalinguistic skills
- Atypical development

Development timeline



Open question

- Is the ability to learn the language innate (Linguistic nativists)?
  - existence of innate Universal Grammar
- Or is it developed from scratch as other learning skills (Constructivists)?
  - no innate predisposition for learning a language
- Much indirect evidence for both teories

Comprehension and production

- Comprehension comes earlier than production (the gap varies child by child)
- First comprehended individual words like „no“
- Early produced words are highly context dependent *([voua-ou] from anything seen from the balcony)*

Comprehension and production - open question

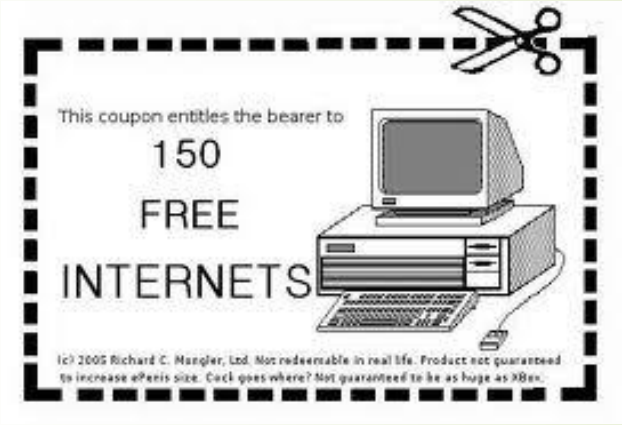
- Auditory representation for recognition and articulatory for production
  OR
  Single mental representation?
- If there is single one, how are auditory and articulatory features linked with it?

Comprehension mistakes

- Insufficient knowledge of meaning in the real world
  - Underextension (*Dog* is only the child‘s dog, not other dogs)
  - Overextension (*Daddy* is any man whom the child encounters)

Comprehension mistakes – also adults?

- Underextension
  - „USB device“ for flash disk
  - Internet vs. internets
- Overextension
  - „flu“ for all common virus infections



Věra Pohlová, 72 let, důchodkyně: – Tyhle aféry každého jenom otravují. Já bych všechny ty internety a počítače zakázala.

Production mistakes

- Differences between percepted and producted sounds

  Father: Say ‘jump.’

  Child: Dup.

  Father: No, ‘jump.’

  Child: Dup.

  Father: No, ‘jummmp.’

  Child: Only Daddy can say ‘dup.’

  - The child is aware of the difference, but is unable to correct it

Some children‘s simplifications

- Ommision of a weak syllable: telephone [tɛfon], about [baʊt]
- Substitution: see [ti], zoo [du], chin [tin]
- Assimilation: dog[gag], boat [bop], bean [min]
- Context-sensitive voicing proces: papa [baba], bag [bæk]
- Combinations: table [bebu], surprise [pwaɪs]

Vocabulary and meaning

- After slow start, child acquires 9-10 words/day at age 2-6 years
  - in urbanized societies
- Largest category: nouns

Vocabulary – open question

- Why are nouns the largest category learned by children?
  - They refer to easily imageable objects
  - They actually are the largest category
  - But in some languages like Korean, proportion of nouns does not exceed proportion of verbs
  - Seems to be highly dependent on the language that child learn

Vocabulary – open question #2

- What is the unit od storage in mental representations?
  - Phonemes
  - Features
  - Syllables
  - Words
  - Any combination?
  - Does the unit change when the vocabulary grows?

Vocabulary – more open questions

- Is the mental representation abstract or is phonetic detail included?
- Are suprasegmental features (stress…) part of the representation or applied as a rule?
- How children‘s incorrect productions influence their mental representation?
- Does the mental representation change as the child‘s lexicon grows?

Meaning – open question

- What meaning do they assign to words?
  - The „real“ meaning
  - The meaning based on their cognitive categorizations of the world
  - Is it really two different things?
  - Example: „*in-ness*“ and „*on-ness*“
    - Do children comprehend the abstract idea
    - Or do they learn these for particular pairs of objects

Grammar

- Start with rote learning of frequent words
- It is unclear when children become productive with morphology
  - Different experiments show different results
  - Seems to be slowly developing for a long period of time
  - Seems to be language dependent (complexity of particular morphology)
  - **Nonce** word test (a creature called *wug* – later, we have two … ?)
    - Children have productive morphology when they answer *wugs*
    - Some children may be productive before age 2 years – difficult to do nonce word test

Grammar mistakes

- Omission of non-frequent inflections (because of rote learning)
- Errors of commision/overgeneralization: using wrong, more frequent inflection (*It go there* for *It goes there*)
- Overregularization (*goed* for *went*)
- Incorrect forms (*her was crying* for *she was crying*)

Early syntactic development

- First utterances are rote learned (*What's that?*)
- Others have slot-and-frame pattern (*Where's X gone?; More X*)
- Open question: Is early syntax analyzed by semantics? i.e. Lion Swim is:
  - Agent + acton verb
  - Subject + intransitive verb
- Is it innate (hypothesized Universal Grammar)?
- Limited by:
  - Lexical learning of the forms
  - Learning the syntactic features particular to the language
  - Processing constraints on production
  - Late biological maturation of some part of abstraction system

Early syntax mistakes

- Ommision of
  - Subject
  - Function words (auxiliaries, complementizers, prepositions…)
  - Finiteness marking (i.e. no third person –s on verb)

Later syntactic development

- Noun and verb phrases increase in complexity
- English-speaking children use determiners *a* and *the* early on
- Use of auxiliaries and verb complement structures (*I want to play out*)
- Between age 2-3, children ask many questions
  - *What's that?*
  - *Where's X?*
  - *What's Mummy X-ing?*
- Start to use subject-auxiliary inversion
  - *Can I X?*
  - *Are you Y-ing?*
- More flexibility after age 3

Subject-auxiliary inversion

- Linguistic nativists claim that subject-auxiliary inversion and other formalisms cannot be abstracted from surface analysis of sequential probabilities
  - → evidence of Universal Grammar
- Constructivists claim that the abstraction can be bulit using existing knowledge of constituency and already established form-meaning mappings

Pragmatic and metalinguistic skills

- Understanding
  - Given and new information
  - Deictic (→context of utterance) and anaphoric (→back in text) pronouns
  - Temporal information
- Genre
  - **Conversation**
  - **Narrative**
  - Reporting, arguing…
- **Metalinguistic**
- Politeness levels

Speech genre: Conversation

- Early conversation: much scaffolding
- From age 2 years, conversation is fluent:
  - When it's scripted around routines
  - When they join multiparty conversation
- From age 2.6 – 3 years: discourse particles appear (i.e. *now* and *just*)
- Between age 2-4: topic continuity (also with questions) radically improves
- Responses to clarification request develops (but still not perfect at age 7y)
- Rhetorical skills (bring arguments, return to topic…) develop during school years for many years

Speech genre: Personal narative

- Early: set of short utteranses with no cohesion
- Narrate an event to another who was not present is difficult task
  - Hearer‘s lack of knowledge of the event timing sequence, participants…
    - Child must take into account what the hearer does and does not know
  - First, children are very repetitive (starting every sentence „*He…*“, every clause „*And then…*“
  - And then ☺ , children need to know means of coordinating clauses in their language (which are very language-dependent)

Metalinguistic skills

- Rhyming
- Metaphors
- Idioms
- Grammaticality judgments

Development of metalinguistic skills

- First, language is learned with skill automatization
- Conscious reflection is developed when the language is relatively fluent
  - After age 3 years
  - Continues through school years
  - Learning to read and write helps learning new forms
    - Some of them are not even present in speech

Atypical development

- Depends on
  - The environment where the child grows up
  - Innate predispositions
  - Physical damage

Atypical development by environment

- When sign language is used
  - development timetable is basically the same as for normal language
  - difficult to compare exactly – different language means

Atypical development by innate predispositions

- SLI (specific language impairment): language is poor compared to other cognitive abilities
- William‘s syndrome: language is advanced compared to low level of other cognitive abilities
- → Linguistic nativists claim it as an evidence of innate basis to grammatical development

Atypical development by physical damage

- Some children which have damaged brain part that is known to be responsible for language abilities in early age:
  - Are often able to learn the language without significant difficulties
  - Investigation shows that they start to use different part of brain
  - → Evidence for constructivist theory (seems that there is nothing „special“ in the language part of our brain)

Thanks for your attention

- Any questions?

Sources

- Lieven (2006): Language Development (ELL2)
- Stoel-Gammon (2006): Infancy: Phonological Development (ELL2)