



Week 2

Principles of language learning

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OLLI

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Week 2 agenda

- Follow-up Week 1
- Critical period for language learning?
- 1st and 2nd language acquisition
- Principles for language learning



Week 1 follow-up

Phonology:
Sound patterns

Constraints in syllable structures

- onset – nucleus – coda (C) V (C)
- “nucleus”, not “rime”

English: *strengths* CCCVCCC

Spanish: *fortalezas* CVC CV



Week 1 follow-up

- **nucleus** (not rime) refers to the auditory peaks of syllables
- **rime** (variant of *rhyme*; middle English, ~1755) refers to the nucleus and what follows
 - full syllable: CVC → bead /bi:d/
 - rime: VC → ead /i:d/
- prototypically, nucleus is a vowel in a syllable → **cat**

Week 1 follow-up

- syllabic consonants can be syllable nuclei (no vowel), especially [l], [r], [m], [n] or [ŋ] (**sing**)
 - English: *bottle*, *church*, *rhythm*, *button*, *lock 'n key*, *potato*

Highly Complex Syllable Structure (5–10% of the world's languages)

Pacific Northwest, Caucasus region, Atlas Mountains region, Patagonia, Northeast Asia

- **Yakima Sahaptin** (Sahaptian; USA)

ksksa

‘elephant ear (mushroom)’

- **Tehuelche** (Chonan; Argentina)

ktʃaʔspʃkn

k-tʃaʔsp-ʃ-k'n

‘it is being washed’

- **Tashlhiyt** (Afro-Asiatic; Morocco)

ts:kʃftst:

t-s:-kʃf-t=st:

‘you dried it (f)’

(Easterday, 2019)

Georgian (agglutinative; consonantal syllable nuclei)

- [click to listen: ჩრდილოეთი](#) (*chrdiloeti*), "north"
IPA: /tʃrdiloet^{hi}/, [tʃt^{hi}iloet^{hi}]
(črdilo, "shadow") + [-ეთი](#) (-eti, "land of")
- [click to listen: გვბრძღვნი](#) (*gvbrdghvni*), "you tear us"
IPA: /gvbrdyvni/
- Audacity—for adjusting tempo in sound files:
<https://www.audacityteam.org/download/>

Last week's questions

- Pronounce unaspirated consonants, such as /p/ (not aspirated in Korean). Link about learning the same in Chinese:
<https://languagelearning.stackexchange.com/questions/3426/how-to-teach-someone-to-correctly-pronounce-unaspirated-t-and-p-in-standard-chin>.
- Dark /l/, in ball; light/clear /l/, in lake.
<https://www.torontospeechtherapy.com/blog/2020/difficulty-with-l-sound>
- Ls with clicks (Xhosa, Trevor Noah, start at 00:32 seconds)
<https://www.youtube.com/watch?v=4z-lkVYwu00>

[pʰ]



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How to stay current with language use of children, young adults?

- interact as much as possible while together—ask what something means
- watch/listen to what they are watching/listening to
- google
- volunteer as a mentor

Definitions

- **Monolingualism:** Use of only one language
 - US Census, 2013, language spoken at home: US, 80% English; 20% other language
- **Bilingualism:** Use of two Ls (20% US; ~50% of world)*
 - Simultaneous: 2 Ls learned from birth and before age 3
 - Ex: Child exposed to German at home and English outside the home
 - Sequential: At home: L1 before 5; at school

*(<https://preply.com/en/blog/bilingualism-statistics/>)

Definitions

- **Multilingualism** (~17% of world)*
 - Proficiency in 3+ languages

- **L2 speakers**: learned after age 12 (somewhat arbitrary)

*(<https://preply.com/en/blog/bilingualism-statistics/>)

Can adults
learn
additional
languages?

Question last week: Can we learn to produce/hear a sound in a L that isn't in ours?

Or, more broadly,

Is there a **critical period** for language learning?

What is a critical period?

- “Critical period” refers to a fixed and crucial time during the early development of a non-human organism when it is able to learn things which are essential to survival. These influences impact the development of processes such as vision, auditory processing, and spatial hearing. (Nickerson, 2021)

<https://www.simplypsychology.org/critical-period.html>

“Critical” period

- Historical progression, late 1800s onward
 - Applied to biological/physiological development in animals (fish embryos)
 - Social bonds in birds
 - Optimal learning of motor skills in infants
 - First (and later, second) language acquisition

For humans learning language:
What is a sensitive period (SP) for language learning?

“A period early in life in which we are especially prepared to acquire a language”

(Carroll, 2008)

Critical or **sensitive** periods hypothesis for normal development (birth onwards)

Feature	Sensitive	Critical
Is there a time window when experience has especially strong influence on neural circuit formation?	Yes	Yes
Are changes in brain function and structure possible after the time window has passed?	Yes	No

Critical/sensitive period research

- **Evidence in the L1**

- Children severely deprived of human contact/interaction
 - Severe speech deficits--likely due to socialization deficits
- Child of parents who are deaf and do not speak
 - By age 8, her language production was indistinguishable from other children her age
- Child mis-labeled as having learning disability due to deafness
 - Began to acquire language at age 30, but no structure

Critical/sensitive period research

- **Evidence in L2 learning (after age 12)**

- Monolingual ideal/native-speaker target
- Level of L2 attainment varies greatly
- Expert and non-expert judgments (grammaticality, accent), response time, eye tracking, fMRI studies
- No unequivocal evidence of a critical period for L2 learning
- 1978 study by Snow & Hoefnagel-Hohle:
 - Older learners do better initially then reach a plateau
 - Younger learners eventually catch up and pass them
- Primary factors: age of arrival in the L2 location; age when instruction starts
- Pronunciation is typically impacted most; grammar also may be non-target

Grammaticality judgment—L2 knowledge

Listen to recording and circle Yes/No (Is sentence grammatical?)

(1a) The farmer bought **two pigs** at the market.

*(1b) The farmer bought **two pig** at the market.

(2a) The little boy **is speaking** to a policeman.

*(2b) The little boy **is speak** to a policeman.

Bottom line

We cannot say definitively that critical period for L2 exists; most likely sensitive period.

Adult level of L2 attainment varies: some succeed, some struggle more to learn, some seem to be stuck

L2 learning is more than grammaticality judgments and accent

1st language acquisition

- Human sensitivity to units, structures, regularities
- Intonation, rhythm patterns, vowels of regular ambient language picked up in utero:
<https://www.sciencenews.org/article/language-learning-may-begin-birth>
- Infants perceive sound categories in their environment AND from other languages not in environment
- Middle of first year: developing phonological knowledge/phonemic categories
 - Losing sensitivity to sounds not found in the linguistic environment
- Explanation of research using sucking rate in infants:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6226186/>

Age in Months	Features observed
2 – 5	Cooing: back vowels (u, o, a); back consonants (g, k)
6 – 8	Babbling: likely a form of play (CV syllable sequences, not specific to L1; stops and nasals, /b, g, m, p)
8 – 10	Vowels and consonants start to resemble ambient L
12 – 18	First words (nouns first, verbs later)
18 – 24	<p>2-word stage (50 - 200 words): starting to communicate meaning</p> <p>English: focus on word order</p> <p>Turkish, Spanish: greater focus on verb forms, conjugations</p>
20 – 24	Vocabulary spurt: 5-9 new words/day to age 6
24-30 months	Telegraphic speech (lack function morphemes): “I go.”
Further syntactic development varies	Negatives, questions, passives, complex sentences

Theories about bilingualism	Research findings
<p>Cognitive deficit hypothesis</p> <ul style="list-style-type: none"> • Advent of 1920's IQ tests (no control for SES, age, proficiency level of the two Ls) 	<p>Not supported</p> <p>SES, social class are more relevant predictors of school success</p>
<p>Unity Linguistic System</p> <ul style="list-style-type: none"> • Start with shared lexicon (vocab) • Two lexicons (one grammar) • Two lexicons, two grammars 	<p>Not supported</p>
<p>Differentiation Hypothesis</p> <ul style="list-style-type: none"> • autonomous and differentiated linguistic representations from outset • Follow same developmental stages in each L1 	<p>Cross-linguistic influences do appear</p> <p>Some delays in acquisition of certain forms</p> <p>Delays are resolved; not permanent</p> <p>Bilingualism brings cognitive advantages</p>



Does learning two Ls make it easier to learn another (in adulthood)?

-
- **Probably**; good evidence exists; multilingualism provides **opportunity** for easier learning of additional Ls (Festman, 2021)
 - “New language information...an **extension** of an already-existing language-knowledge system.”
 - Learning **environment** (use and exposure), communicative **demands** (switching among Ls), **genetic predisposition**
 - Those with greater phonological short-term memory “likely to learn L3 vocabulary more efficiently”
 - Bi-literacy is important

Learning the L1(s) vs L2(s)

Both L1 and L2

- Systematic; understanding > use

First language

- No existing system
- Starts in utero
- No prior knowledge
- Child focused on language (instruction, correction not needed)
- Takes 5+ years for speaking; more for writing

Second language

- 1+ existing system(s)
- Starts after other L(s)
- Expansive world knowledge
- Adults have a life
- Instruction, correction help
- Can develop basic skills in 6 to 12 months of dedicated study/practice
- Phonology and complex grammar more challenging

How are additional languages learned?



Natural exposure, living/interacting in the target language environment



Formal language instruction



Self-instruction

How are additional languages learned?



Natural exposure, living/interacting in the target language environment

+



Formal language instruction

+



Self-instruction

“Level of attainment”: What is language proficiency?

- **Distinguished**—“Diplomat”; sophisticated language use in any context
- **Superior**—Reflective, “abstract thinker”; unfamiliar topics; + field-specific vocab
- **Advanced**— “Reporter”; narrate, describe; general, current topics
- **Intermediate**—create w/language; Qs; simple, predictable, familiar settings
- **Novice**—formulaic, rote; words, phrases; lists; common daily life; lower comprehensibility



Learning an L2: Levels of difficulty for native English speaker (Defense Language Institute)

Assumes 25 hours per week, to achieve level 2 out of 5 (= everyday skills)

<https://www.ausa.org/articles/dlis-language-guidelines>

Difficulty, low to high	Weeks of instruction (average)	Total hours (average)	Languages (incomplete list)
I	26	650	Spanish, French, Italian, Portuguese
II	35	900	German, Indonesian
III	48	1200	Farsi, Russian, Uzbek, Hindi, Urdu, Hebrew, Thai, Serbian Croatian, Tagalog, Turkish, Kurdish
IV	64	1600	Arabic, Mandarin, Korean, Japanese, Pashto

Principle:

Cognitive

Affective

Linguistic

Cognitive— mental/intellectual functions

- **Meaningful:** focus on goals/purpose
- **Motivation:** rewards, goals; fun, useful, challenging (gamification)
- **Automaticity:** focus on grammar/word choice → meaning/fluency
- **Strategies:** visual vs auditory; individual vs group
- **Learning styles**

Activities

- Decide **focus/purpose**
- Set realistic **goals**
- **Input:** podcasts with transcripts, radio stations
(<https://radio.garden/browse>);
<https://www.duolingo.com/>; tutor; class; convo partner
- 3 levels of **practice:** drills at word-level, phrase/sentence; then free production

Principle:

Cognitive

Affective

Linguistic

Affective—feelings about self, learning, culture

- Language ego—fragile, vulnerable L2 identity, less competent in L2 than L1
- Self-confidence—belief in ability to learn
- Calculated risk-taking—use L2 meaningfully, asking questions, interacting

Activities

- Self-reflection
- What are some small risks you can take to practice?
- Start by using translation apps

Principle:

Cognitive

Affective

Linguistic

Linguistic—learning a complex language system

- Native language effect—interfering and facilitating effects of L1
- Systematic progression to L2 competence
- Communicative competence

Activities

- Identify key similarities, differences
- Facilitating or interfering?
- Start small and work up
- Focus on being understood and on comprehending the L2 (speaking and listening)

Systematic progression to L2 competence

- Sounds and words → “chunks” → formulas → creative use of L2
- Cognitive load: working toward automaticity
- Use focused study to improve **accuracy** and build vocabulary
- Use authentic open-ended tasks to build **fluency** (automaticity)

What makes L2 language-learning harder or easier?

Not (or less) controllable

- “Language distance” (English to French vs English to Chinese)
- Phonemic coding ability (ability to identify and **store** in long-term memory, new language sounds or strings of sounds, Carroll, 1971)
- Working memory/cognitive load
- Exposure to/use of the L2

Controllable

- Exposure
- Use
- Connecting form and meaning
- Instruction in the L2
- Motivation
- Attitudes about language learning
- Fear of making mistakes

(Celce-Murcia et al., 2010; Juffs & Rodriguez, 2007; Lightbown & Spada, 2006; Reynolds, 2023).

Comments, thoughts, questions?

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