

# Language attrition in the mind of the speaker

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## What is linguistic knowledge?

- Language is vocabulary, structure, pragmatics
- Language is a collective, social phenomenon
  - Convention, adaptation
  - Language contact
  - Language shift, attrition
- Language is a cognitive system
  - Lexical, phonological, syntactic, semantic, pragmatic knowledge
  - Memory, storage, retrieval
  - Competence and performance

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## “Rustiness”

- L2 knowledge:
  - No expectation of accentless, error-free speech;
  - We expect to need years of learning and practice to attain higher language level
  - We expect to need regular use to maintain it.
- With L1, we imagine language proficiency is set:
  - We don't expect to need practice or maintenance.
  - But we do!

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## Living in a different language

Eva Hoffman

- Born in Kraków, Poland (1945).
- At 13 years old, family emigrated to Vancouver, Canada.
- *Lost in Translation: Life in a New Language* (1989)




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"For my birthday, Penny gives me a diary... If I am indeed to write something entirely for myself, in what language do I write? Several times, I open the diary and close it again. I can't decide.

Writing in Polish at this point would be a little like resorting to Latin or ancient Greek

- an eccentric thing to do in a diary, in which you're supposed to set down your most immediate experiences ... in the most unmediated language. Polish is becoming a dead language, the language of the untranslatable past.

But writing for nobody's eyes in English? That's like doing a school exercise, or performing in front of yourself, a slightly perverse act of self-voyeurism.

...I finally choose English."

(Eva Hoffman, *Lost in Translation*)

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## Examples of L1 attrition, I



- Highly publicised
- 2000: German tennis star Steffi Graf moved to the US (age 31).
- 2008: at an award ceremony she said that 'her German was no longer that good.'
- This made all the headlines!

(Thanks to Monika Schmid for ex.)

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## Examples of L1 attrition, II



- US soldier Sgt. Bowe Bergdahl was held captive from 2009-2014 by Taliban-aligned network
- Released May 31, 2014
- His father said he "had trouble speaking English" at a press conference at the White House
- Twitter responded with outrage



ForGodAndCountryInSC @NCNolesFan · 5 Jun 2014

What? He forgot he was American maybe. "@washingtonpost: Could Bowe Bergdahl really forget how to speak English? In.is/wapo.st/G6JSG"

to Monika Schmid for ex.)

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## Examples of L1 attrition, III

- Silvija: Livonian speaker
- Lived in her village until age 14, then in Riga.
- Travelled through Germany and settled in Boston, USA.
- Her children didn't know she was not Latvian like their father.
- Decades later, a linguist came to work with her.
  - On the first day, Livonian words were hard to recall.
  - Finally she remembered and sang a children's song
  - Next day: many more words came to mind.

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## Examples of L1 attrition, IV

"I do find it absolutely extraordinary [...] that when you were his age you were speaking nothing but German. Can you still speak it?"

"A bit," said Anna. "I've forgotten a lot of it."

[The boy] stared at Anna in disbelief. Then he said "I wouldn't."

"Wouldn't what?" asked his father.

"Forget. [...] I wouldn't forget the words I know. Even if - even if I learned a million trillion new words. I'd always remember."

- *A Small Person Far Away*, by Judith Kerr (refugee from Germany (1933) living in the UK)

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### Language loss

**Communities/societies:**

- Language shift
- Language death

**Individuals:**

- Pathological (e.g. aphasia)
- Non-pathological:  
**Attrition**

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### Varieties of bilingualism: Context of language acquisition



- Native speakers acquiring two languages
- “Heritage speakers”
- Incomplete learners
- L1 attriters
- L2 learners

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### Heritage speakers

- “Heritage speakers”
  - “The crucial criterion is that the heritage language was first in the order of acquisition but did not develop fully at age appropriate levels because of the individual’s switch to the socially-dominant language” (Benmamoun, Montrul & Polinsky, 2013)
  - Usually born in “other-language” (L2) environment
  - Typically 2<sup>nd</sup>-generation children of immigrants
  - Similarities with both native speakers and L2 learners
  - Great variation in proficiency
    - within groups and in lifespan of individual speaker
    - Measure via biographical reports, speech rate comparisons, lexical proficiency (both last 2 correlate w structural proficiency)

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### Sequential bilinguals

- Born in L2 environment:
  - e.g. L1 at home, start learning L2 when they go to school
- Born in L1 environment:
  - Incomplete learners
    - Migration before the age of ~12
    - How different is this from heritage speakers?
  - L1 attriters
    - Migration at age 13+

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### L1 attriters

- L1 attriters
  - Attrition: gradual loss of aspects of native language by a healthy native speaker (Schmid 2011)
  - Eventually: 'native speaker' becomes like a 'non-native speaker' in judgment of peers
  - Based on observation of:
    - Vocabulary: difficulties with lexical retrieval, code-switching because of lexical gaps
    - Phonology: divergent pronunciation
    - Morphosyntax: errors, avoidance of some structures, overuse of others due to transfer

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### Varieties of bilingualism

- Speakers with two native languages
  - "Heritage speakers"
  - Incomplete learners
  - L1 attriters
  - L2 learners
- Is this categorisation supported by the evidence?
  - What other factors may affect language acquisition/attrition?

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## Factors affecting language proficiency

- Input: quantity and quality
- Temporal order of acquisition
- Prevalence of use:
  - Contexts of use
  - Frequency, regularity, intensity of use
- Language dominance at any particular time
- Sociopolitical status of the languages
- Literacy

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## Question



- What about a community speaking a language undergoing language shift or language death?
- Would you expect the speakers to be more like:
  - heritage language speakers or
  - L1 speakers who have migrated to a community with another dominant language?

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## L2 affecting L1?



- Phonetic effects on L1 after only 6 weeks of language learning!
  - Novice L1 English learners of L2 Korean (Chang, 2012)
- After 6 months of L2 language immersion, slower L1 lexical retrieval
  - Picture naming and semantic fluency (Baus, Costa & Carreiras 2013)
  - Effect found for infrequent words and non-cognates
- ❖ Cross-linguistic influence
  - Not unidirectional
  - Occurs even at fairly low levels of L2 proficiency
  - Can affect language on various levels

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## International adoptees



- Children whose linguistic environment is changed through adoption
- Reported to forget their language of origin remarkably quickly, within months
  - even kids adopted as late as 9 yrs old! (e.g. Nicoladis & Grabois 2002; Isurin 2000)
- Studies of adoptees' knowledge of their early language later in life (Pallier et al. 2003, Ventureyra et al 2004):
  - generally unable to recognise basic vocabulary in language of birth, unable to identify L1 among others.
  - Even neuroimaging showed no recognition of Korean sentences

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## International adoptees

- But the early language may leave some sort of trace (Pierce et al. 2014; also see Hyltenstam et al. 2009)
  - Children adopted from China before age 2; studied 10 yrs later
  - Nonsense syllables vs humming with speech-like intonation
  - Comparison groups: monolingual French, bilingual Fr-Chinese speakers
  - Processing was like bilinguals: intonational pattern processing recruited same brain regions as for speech in tonal language.
  - Some L1 remnants maintained
  - L2 attainment is not enhanced by L1 attrition

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## Reasons for divergence among heritage L1 learners

- Input in the HL may be *defective* (Verhoeven 2004) as well as *reduced* (Unsworth et al. 2011).
- L1 has a limited domain of use (e.g. domestic)
- Lack of schooling in the L1 (Rothman 2007)
- Attrition (Polinsky 2011) due to disuse
- Age of onset of L2: early onset = less HL proficiency (Montrul 2008)

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### Development of attrition studies

- Early on (1980s), practical orientation (foreign language learning in schools)
- Later, theoretical interest:
  - Can theoretical models of acquisition, knowledge and processing account for attrition ?
- More recently:
  - Any model of language processing and development has to be able to account for attrition phenomena.

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### L1 attrition: What is affected?

**Structure**

the "disintegration [...] of the structure of a first language" (Seliger & Vago 1991:3)

"certain aspects of a speaker's linguistic competence undergo irrevocable changes [...]" (Cazzoli-Goeta & Young-Scholten, 2017)

**Skills**

"loss of skills in individuals over time" (de Bot 1996:579)

"non-pathological decrease in proficiency [...]" (Köpke & Schmid 2004: 5)

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### L1 attrition & L2 development

L1 attriters and near-native L2 speakers are similar.

- Reduced exposure compared to monolingual L1 speakers (Sorace 2005:80)
- The same areas of grammar seem unstable.

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## Pronunciation

- Notoriously the most difficult aspect of L2 learning for late learners
- “Foreign accent” ratings: negative correlation with age of acquisition
  - Sensitive period? Degree of L1 entrenchment? Other related factors?
- Comparison of L1 attriters, monolinguals and L2 learners (Hopp & Schmid 2013)

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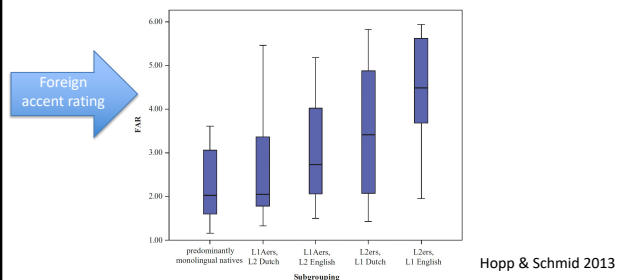


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## Pronunciation



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## Theoretical questions

1. Does attrition have to do more with change in structural knowledge ('competence') or variability in application of knowledge/control ('performance')?
  - Is L1 attrition a matter of **structural knowledge** or of **use**?
  - Can attrition lead to **changes in the linguistic system**?
2. Native speaker or second-language speaker?
  - Can an L1 attriter turn from a '**native speaker**' into a '**foreigner**'?
  - Can the L1 system of an attriter develop characteristics of an L2 system?

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## Attrition of lexical knowledge

- Lexical knowledge is vulnerable to attrition and may be affected at an early stage
- Lexical attrition can manifest itself in
  - *lexical access* problems (naming tasks, diminished vocabulary in free speech)
  - *decrease in fluency* (hesitation phenomena, slower speech rate)

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## Attrition of structural knowledge

- Grammatical knowledge is more stable.
  - Generativist approaches assume ‘core syntax’ is invulnerable to attrition, but (a) this may not hold true and (b) *interface phenomena* may be more vulnerable, subject to influence.
- Grammatical ‘attrition’ can manifest itself in:
  - reduced performance on grammatical judgement tasks
  - reduction in sentence complexity (?)
  - allomorphic reduction (?)
  - a foreign accent

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## Why assume lexicon is ‘most vulnerable’?

- Assumption that the lexicon will attrite ‘first’ and ‘most dramatically’ compared to other areas (e.g. de Bot, 1996; Hulsen, 2000; Köpke & Schmid 2004; Montrul 2008; Opitz 2011)
- Why?
- Evidence from language change
- Evidence from language contact/death
- Volume:
  - The lexicon is a large, loosely connected network of items that can tolerate a certain amount of change.
  - In the grammatical system, changes affect more of system immediately.

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### Problems in testing this assumption?

- How can we verify whether the lexicon changes first?
  - Need longitudinal studies
  - Need to have data on earliest phases of attrition
- How can we verify whether the lexicon changes most?
- Can meaningful comparisons of attrition effects across linguistic levels ever be made?

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### The lexicon in language attrition?

- borrowings (CS or more structural borrowings)
- restructuring of items
- convergence of items
- shift of lexical fields
- reduction of accessibility
- reduction of number of items in (active or passive) vocabulary
- What does all of this mean?

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### The lexicon in language attrition

- Lexical sophistication
  - E.g. high and low-frequency items as used by Turkish and German attriters (Yilmaz & Schmid, 2013; Schmid & Jarvis, 2014)
- Disfluency in attrition (Schmid & Beers Fägersten, 2010)
- Lexical specificity

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## Lexical specificity

- Use of underspecified items
- American L2 speakers of Hebrew: unusual lexical choices in a Frog Story retelling task, e.g. 'water' for 'pond', 'little animal' for 'deer' etc. (Olshtain & Barzilay 1991)




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## Categorization

- Drinking containers classified in English mainly acc. to material (e.g. 'glass')
- Hebrew and Japanese classify them according to shape
- English and Russian differ:
  - English has three basic categories (*glass, mug, cup*)
  - Russian has ten (*chashka, stakan, kruzhka, riwmka, fuzher, bokal, kuvshin, lozhka, piala and vaza*) (Pavlenko & Malt, 2011)



- ← This object was referred to as
  - *chashka* by the bilinguals (attriters)
  - *riwmka* by monolingual Russians

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## How to measure lexical attrition?

- Controlled tasks:
  - Picture Naming Tasks
  - priming tasks
  - verbal fluency tasks
  - acceptability tasks
  - violation paradigms (EEG)
  - others
- Free speech
  - how do we elicit it?
  - what do we do with it?

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## Researching lexical attrition

- How does lexical L1 attrition manifest itself in people who have lived in L2 environment for long period of time? (Schmid & Jarvis, 2014)
- Participants
  - L1 German attriters, L2 Dutch and English + control group
- In-depth analysis of “free speech”: 2 samples per speaker
  - Lexical diversity
  - Lexical frequency + sophistication
  - Lexical distribution (of items across text)

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## Results

- 2 speech samples from each speaker:
  - Conversation about individual’s history and biography (30-90 min., few contextual constraints)
  - Narrative retelling of silent film clip
- Control group performed better than bilinguals on verbal fluency
- Type-token ratios *did not distinguish* between groups
- **Differences in lexical access and use:**
  - Lexical diversity
  - **sophistication and distribution** of items across text in free speech
  - **Predict group membership better** than formal tasks or elicited narratives
- **Extralinguistic factors** like frequency of exposure and use or length of residence were **NOT predictive!**

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## Restructuring

- L1 lexical item may still be used, but shifted meaning
  - semantic extension, semantic narrowing
- Semantically bleached items (quasi-auxiliaries, etc.), fixed expressions > extended to L1
- English: *got lost*, Estonian *eksis ära*.
  - “*Ta sai... She got... Ta eksis ära*”
- English: *take a pictures, take a bus*, Estonian: *?võtma pilti, võtma bussil* (“running for office” in English-Spanish: Otheguy & Garcia 1988, and “running short of something” in English-German, Hutz, 2004)

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### Convergence

- Convergence seems to depend on formal similarity / functional difference.
- Estonian: *ma panen laadima*. English: *I'll put it to charge*.
- English: *exaggerate*, Dutch *overdrijven* > English: \*to overdrive (Sharwood Smith 1983)

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### Characteristics of L1 attrition

- Word finding difficulties, disfluencies, borrowings
- Semantic restructuring/change
- Grammatical errors
- Foreign accent
- Uncertainty about pragmatic conventions (politeness, pronouns of address)
  - These are broadly the same phenomena that we see in L2 learners

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### Are attriters “foreigners”?

My grandmother: native to nowhere?

As elsewhere with research on bilingualism, two important questions are:

- How do the speakers characterise themselves?
- What are we using labels for /what is the aim?

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## Conclusions

- Very diverse range of speakers and contexts
- L2 and L1:
  - may have bidirectional effects
  - On various linguistic levels
- Psycholinguistic research into L1 attrition is an exciting, fairly young field
- Lots of unresolved questions

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**Thank you!**  
**Aitäh!**

Any questions?

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