

Interpreting non-canonical word orders: Attrition and ageing effects

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Heritage speakers and unusual demographics

Studying Heritage Icelandic in North-America

Heritage Icelandic is mainly spoken in Canada, more precisely in the Interlake region north of Winnipeg in Manitoba and in Northern Saskatchewan, and parts of North Dakota in the United States.

The bulk of emigration from Iceland to North America took place from 1873 to 1914. Over 14,000 Icelanders (out of 75,000 inhabitants) are documented to have left for North America (Kristinsson 1983). Few seem to have left after 1914, meaning no renewal of speakers from the old country. In the past 30 years, we observe a dramatic decline in numbers of persons claiming to speak Icelandic in North America.

North-American Heritage Icelandic survives today in third and fourth generation Canadians and Americans of Icelandic descent and has **few speakers under the age of 70**.

The data discussed here were collected within the project **Heritage language, linguistic change and cultural identity** funded by The Icelandic Centre for Research (RANNÍS) 2013-2015.

Original and subsequent questions

In what way does word order influence language comprehension in heritage speakers of North-American Icelandic?

→ Difficulties with argument reversing in heritage speakers (e.g. Polinsky 2009 and Anderssen and Westergaard 2017).

→ Comparison to previous data from Icelandic monolingual language acquisition (Þórðardóttir 2014, Sigurjónsdóttir 2015) and patients diagnosed with aphasia following left hemisphere stroke (Magnúsdóttir 2000).

Later: **Are difficulties in language comprehension tasks due to attrition/incomplete acquisition or ageing?**

Language and ageing

Within sociolinguistics, correlation with age is traditionally associated with **change in apparent time and/or age grading** (e.g. Sankoff and Blondeau 2007).

Other approaches, within speech-language pathology and psychology, show that different results might be due to the cognitive effects of normal aging, and in particular the well-documented **decline in language processing ability** (Burke and Shafto 2008):

Typically, comprehension is considered to be relatively well-preserved in older adults, while it is widely recognized that production shows marked age-related decline (particularly word finding failures, increased slips of the tongue, pauses in speech).

Studies on the processing of complex sentences (increasing the working memory load and overall processing cost) indicate that this is in part due to **compensatory knowledge-based strategies**, where plausibility evaluation might play a role (e.g. Federmeier and Kutas 2005 and Wingfield and Grossman 2006).

Study: Creating a new control group

To explore the possible effect of ageing on the picture selection task which had been administered to heritage speakers, we recruited two different control groups of monolingual Icelandic speakers.

Heritage speakers

- 21 participants, two of them under 60. Mean age 70.5, sd = 14.7.

Control group I

- Older Icelandic speakers, 30 participants older than 70. Mean age 76,6, sd = 5.8.

Control group II

- Younger Icelandic speakers, 30 participants between 30 and 40 years old. Mean age 34.4, sd = 3.3.

Picture selection task

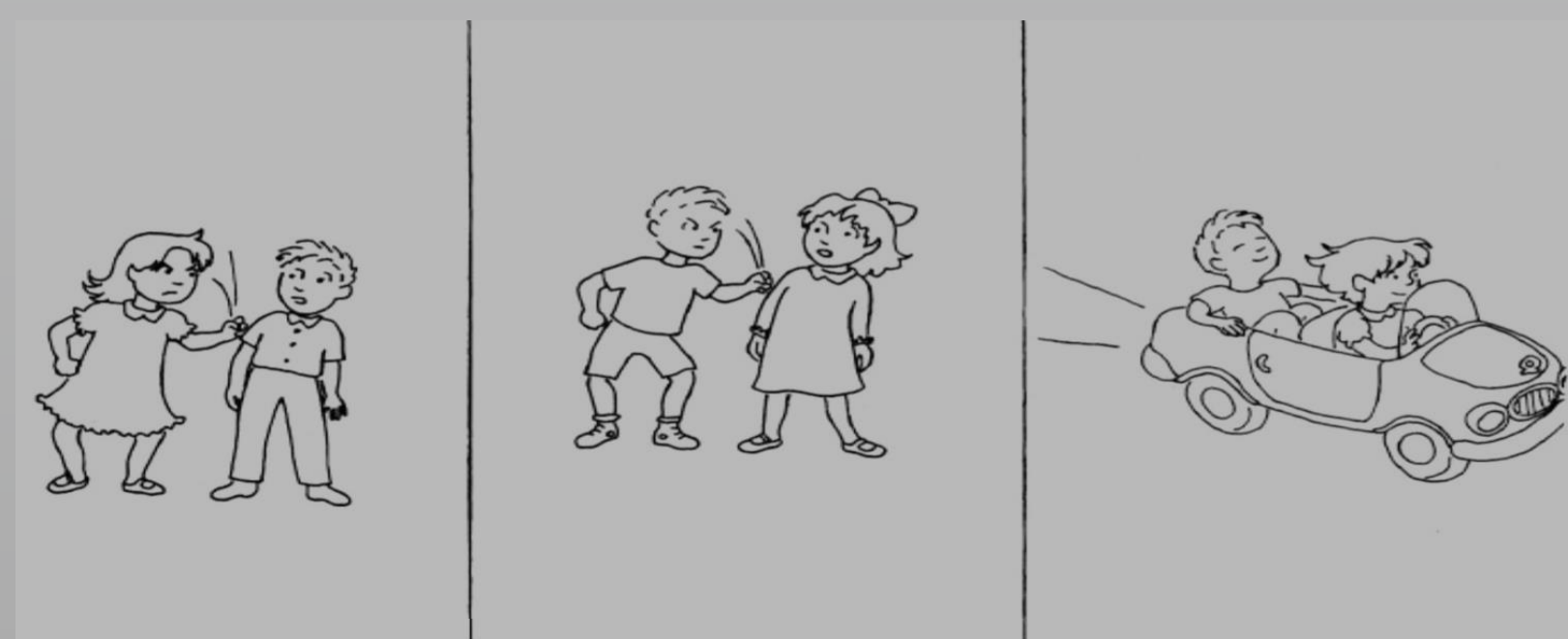
| | |
|---|----------------------------|
| Stelpa kitlar strákinn . | (active - SVO) |
| The.girl.NOM tickles the.boy.ACC | |
| Það er kitlað strákinn . | (new impersonal, no agent) |
| It is tickled the.boy.ACC | |
| Strákurinn er kitlaður . | (short passive, no agent) |
| The.boy.NOM is tickled | |
| Strákurinn er kitlaður af stelpunni . | (long passive) |
| The.boy.NOM is tickled by the.girl.ACC | |
| Hvaða stelpa kitlar strákinn? | (wh-phrase, agent focus) |
| What girl.NOM tickles the.boy.ACC | |
| Hvaða strák kitlar stelpa ? | (wh-phrase, patient focus) |
| What boy.ACC tickles the.girl.NOM | |
| Það er stelpa sem kitlar strákinn . | (cleft, agent focus) |
| It is the.girl.NOM that tickles the.boy.ACC | |
| Það er strákurinn sem stelpa kitlar . | (cleft, patient focus) |
| It is the.boy.NOM that the.girl.NOM tickles | |

| | |
|--|---------------------------------|
| Strákinn kitlar stelpa . | (topicalization, patient focus) |
| The.boy.ACC tickles the.girl.NOM | |
| Strákinn er stelpa að kitla . | (topicalization, auxiliary) |
| The.boy.ACC is the.girl.NOM to tickle | |

6 action verbs across 10 sentence types

- 3 accusative verbs (kitla - ‘tickle’, mála - ‘paint’, lemja - ‘hit’)
- 3 dative verbs (greiða - ‘comb’, ýta - ‘push’, klappa - ‘clap’)

Response: Right or wrong (1 or 0), two pictures with inverse semantic roles and one unrelated control.



Main Results

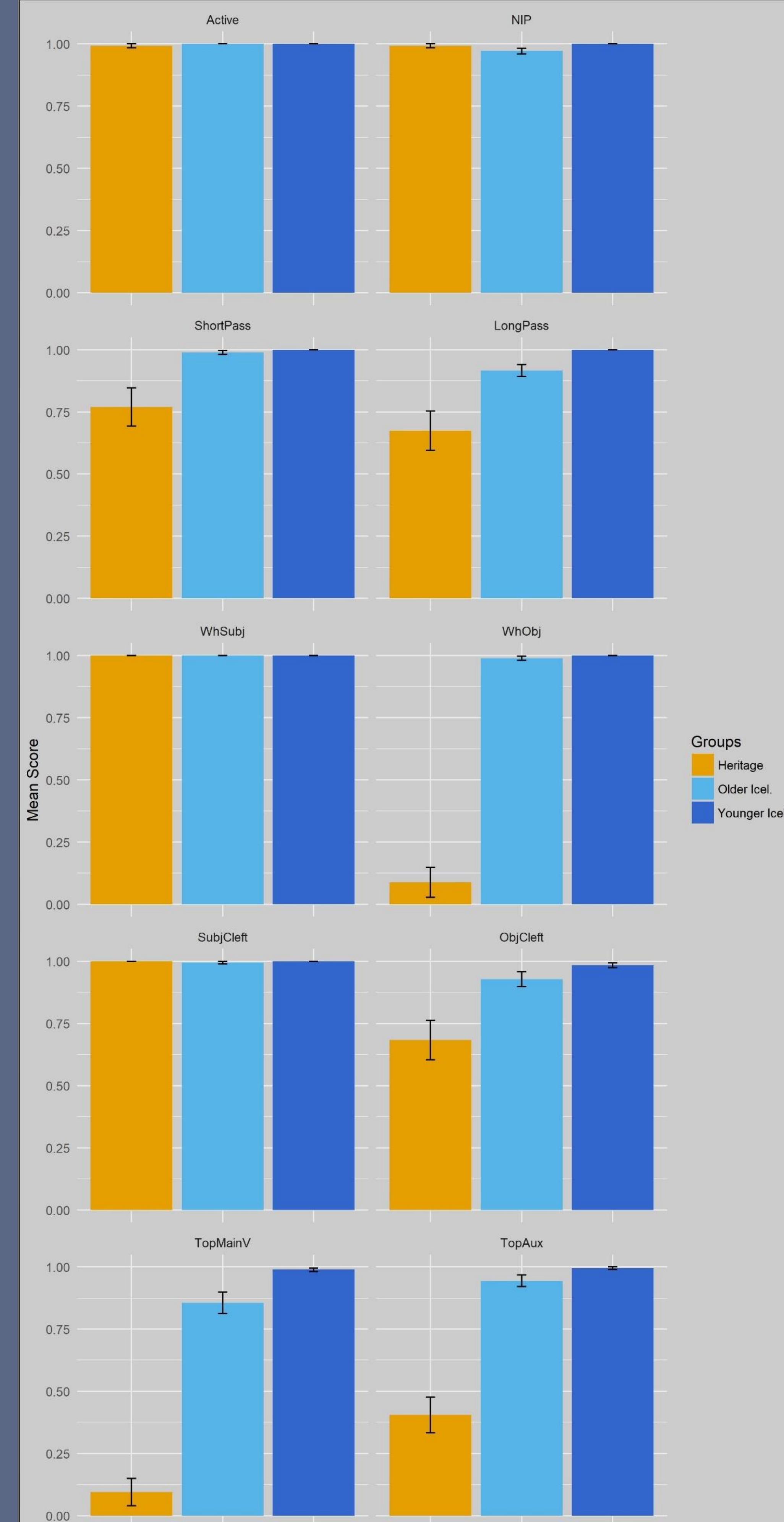


Figure 1. Picture selection task. Mean scores of different speaker groups across 5 pairs of sentence types. Heritage speakers (N = 21), older Icelandic speakers (N = 30) and younger Icelandic speakers (N = 30). 95% confidence intervals.

Analysis and implications

Ageing matters but not as much as attrition and/or incomplete acquisition

The results show that age matters in a number of constructions, but its effects play a much smaller role than the contrast between heritage speakers and speakers raised in Iceland. Interestingly, the difficulties encountered by older Icelanders do not pattern in the same way as the heritage speakers’ results. This allows us to partly untangle the ageing effects from the much larger effects of being a heritage (attrited) speaker.

Different constructions - different effects

The different patterns across sentence types show us that the difficulties heritage speakers encounter are not general sentence comprehension difficulties, but linked to specific constructions. This is also true of the older Icelandic speakers. The reported effects are only present in certain contexts.

Heritage speakers: Argument reversing > case cues

Differentiating between a variety of constructions allows to draw more precise conclusions when it comes to the nature of the difficulties. The heritage speakers show patterns similar to the results found in language acquisition data, where the argument order relative to the verb is crucial, while the case marking information is not as useful (contrary to the aphasia results).

Ageing effects: Frequency, familiarity and plausibility?

On the other hand, the older speakers show a less consistent and clear pattern which might be compatible with the hypothesis of knowledge-based compensation strategies.

In general

The results underline the need for a broader interpretation of age correlations in studies on language variation and change, as well as heritage language studies. Research on language and ageing might also benefit from a more general approach on language learning and language loss.

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