Incomplete Acquisition
and Language Attrition in Different Settings

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Structure and purpose of the talk

Structure:

1. Heritage language research: Some issues
2. The project "(Icelandic) Heritage Language, Linguistic Change and Cultural Identity"
3. Some results:
   - *Plural formation*
   - *V2/V3*
   - *Case*
   - *Processing of syntactically complex sentences*
4. Summary

Purpose:

To give examples of things we can learn about language by doing "theoretically informed" research on heritage languages.

Heritage language research

Heritage language – a commonly accepted description:

- The language someone learns at home as a child but which is a minority language in the society. It is thus often an indigenous language or a language of immigrant groups.

A typical **heritage language speaker**:

- A typical heritage language speaker is more competent in the majority language than the heritage language and feels more comfortable communicating in that language.

The **social status** of heritage languages can obviously vary widely as does the **linguistic competence** of heritage language speakers.

Heritage language research, 2

Research on heritage languages may shed light on linguistic issues like the following:

- **language acquisition**, e.g. by comparison of the acquisition of heritage languages and typical acquisition in a monolingual setting: what is easily acquired and what is not ...
- **language attrition**, i.e. to what extent speakers of heritage languages lose their proficiency in the language and how this is similar to or different from other kinds of "language loss" (through illness, old age ...)
- **language transfer**, i.e. what kinds of interference do we find between the heritage language and the dominant language?
- **relationship** between **competence**/**performance**, **production**/**processing**, the ability to make use of linguistic cues ...

See e.g. Bennamoun et al. (2010).

The project

- (Icelandic) *Heritage Language, Linguistic Change and Cultural Identity.* PIs Höskuldur Thráinsson and Birna Arnbjörnsdóttir, Univ. of Iceland
- Support: The Icelandic Research Fund (IRF) and the University of Iceland Research Fund
- Field work conducted 2013 and 2014 in:
  - **Manitoba, Canada**: Winnipeg, Gimli, Riverton, Arborg, Lundar, Brandon, Portage la Prairie
  - **Saskatchewan, Canada**: Regina, Wynyard, Foam Lake
  - **North Dakota, US**: Fargo, Mountain
  - **Alberta, Canada**: Edmonton
  - **British Columbia, Canada**: Vancouver, Nanaimo
  - **Washington, US**: Point Roberts, Blaine, Seattle

- Subjects: 126 speakers of NAmIce (average age 77 years) + 101 speakers of English (some of them of Icelandic descent)

The project, 2

The areas visited:

The Project, 3

Linguistic phenomena looked for included:

1. Phonetics and phonology:
   - The development of regional phonological features in NAm
   - Intonation (Nicole Dehé)
2. Morphology:
   - Plural formation of nouns
   - Tense (and aspect)
3. Syntax:
   - Subject and object case; agreement; passives
   - Pronouns and (long distance) reflexives; indicative/subjunctive
   - V2/V3; object shift
4. Lexical semantics:
   - Semantic categorization: colors, kitchen utensils, positional expressions
5. Language processing:
   - Interpretation of syntactically complex sentences

The Project, 3

Elicitation methods:

- Interviews to elicit (semi-)spontaneous speech (incl. *Frog* ...) +

1. Phonetics and phonology:
   picture-naming (+ reading)
   describing a map, asking questions ... (Nicole Dehé's intonation study)
2. Morphology:
   Tests, involving pictures (incl. a *Wug*-test ...)
3. Syntax:
   Various tests, mainly selection between alternatives ...
4. Lexical semantics:
   Test from an international study: Evolution of Semanti Systems (EoSS)
5. Language processing:
   A special test involving picture identification, originally designed to test synt. comprehension of Broca's aphasics (Sigríður Magnúsdóttir 2000).

Some results: Plural formation

Plural formation

Basic rules: gender dependent, partly regular, "strong"/ "weak"

	irregular:	strong:	weak:
masc.	*fótur – fætur*	*hund**ur** – hund**ar***	*kodd**i** – kodd**ar***
		*kjóll – kjó**lar***	[*Dan**i** – Dan**ir***]
		[*læknir – lækn**ar** (-ir**ar**)*]	
		*sel**ur** – sel**ir*** (*-ar*)	
fem.	*mús – mýs*	*nál – nál**ar***	*sáp**a** – sáp**ur***
		*sól – sól**ir***	*pann**a** – p**ö**nn**ur***
neut.		*ljón – ljón*	*aug**a** – aug**u***
		*glas – gl**ö**s*	
		kerti – kerti	

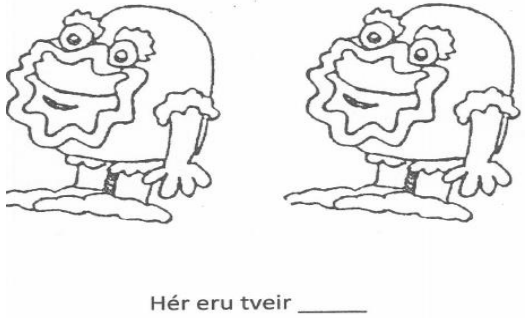
strongly regular – weakly regular – not predictable (marked?) – irregular

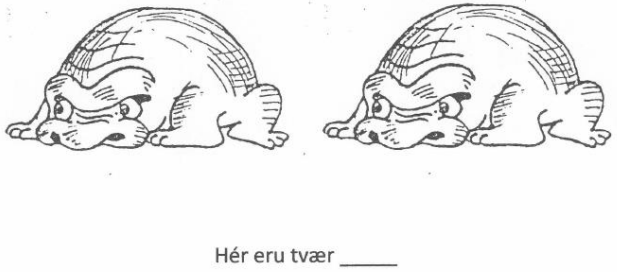
[ ] = not included in the test

Plural formation, 2

A *Wug*-type test: *Hér er einn hundur.* here is one(m.) dog

Hér eru tveir ___ here are two(m.) ___





Plural formation, 3

The types of nonsense words tested:

	strong:	weak:
masc.	*teill – teil**ar***	*nel**i** – nel**ar** (-**ir**)*
	*þetir – þet**ar** (-ir**ar**)*	
fem.		*kím**a** – kím**ur***
		*darg**a** – d**ö**rg**ur**, krað**a** – kr**öð**ur*
neut.	*lún – lún*	
	*kas – k**ö**s, darm – d**ö**rm*	
	buni – buni	

So these should all be strongly regular or weakly regular

Plural formation, 4

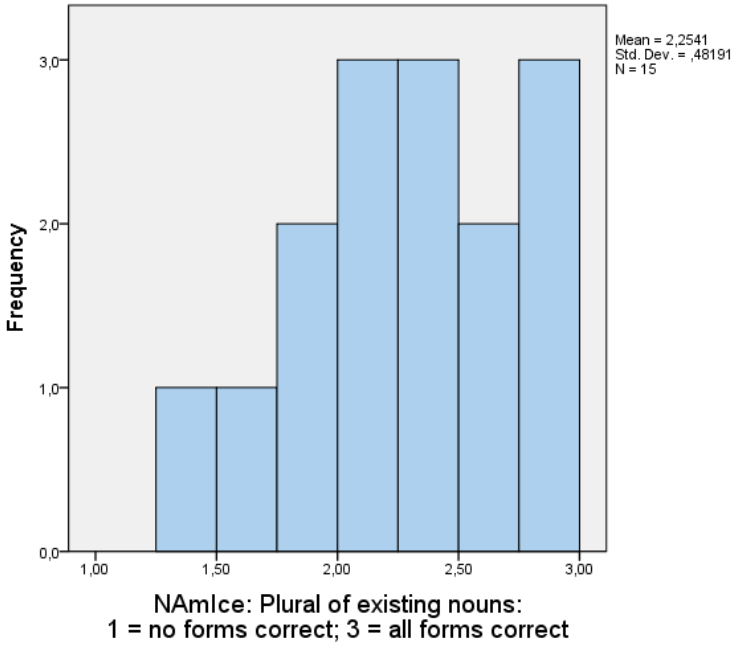
Prediction:

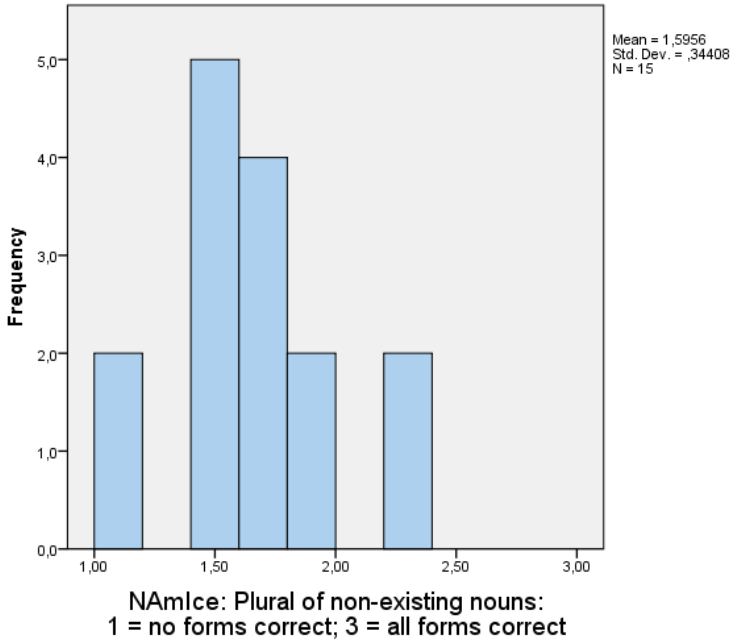
Based on what we know about the nature of heritage languages and the different complexity/predictability of the plural formation rules involved, we predicted that:

- Speakers of NAmIce should know the plural forms of common existing nouns.
- Speakers of NAmIce might have problems with at least some of the nonsense words.
- Speakers of NAmIce might do better on the simplest (most predictable) nonsense words (weak masc., weak fem. (without umlaut), strong neuter ...)

Plural formation, 5

Performance of NAmIce speakerson plural of existing vs. non-existing nouns:

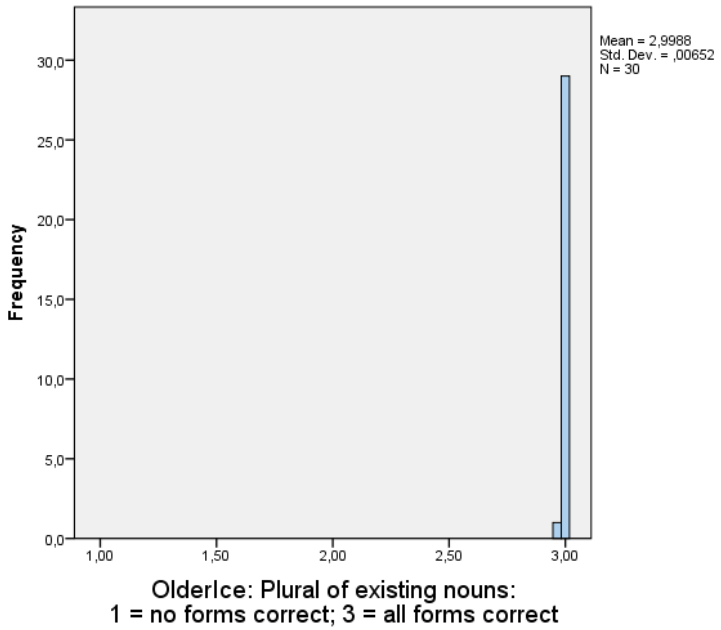


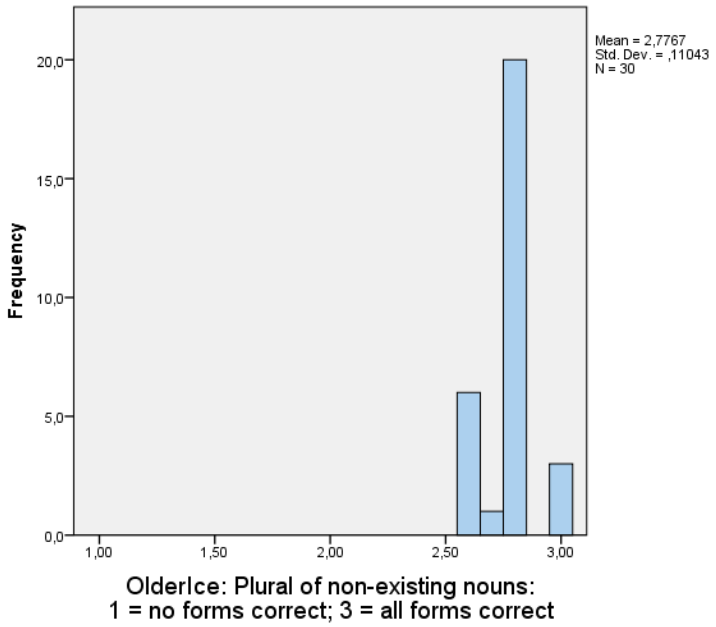


Considerable difference (mean 2.25 vs. 1.60 out of 3)
Maybe older speakers (15, av. age 72, range 30–88) find the *Wug*-test difficult/silly ...

Plural formation, 6

Performance of IceIce speakers on the plural tests:
Older speakers (30, av. age 77 years, range 69-89).

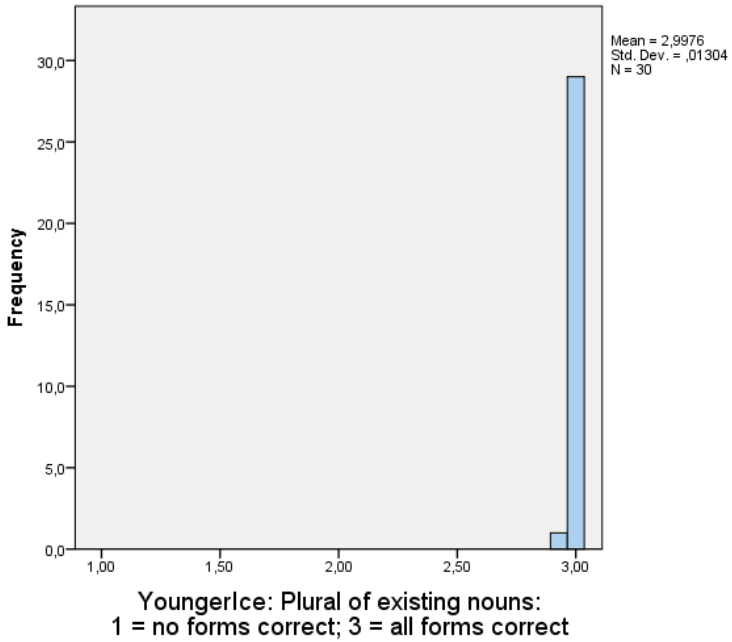


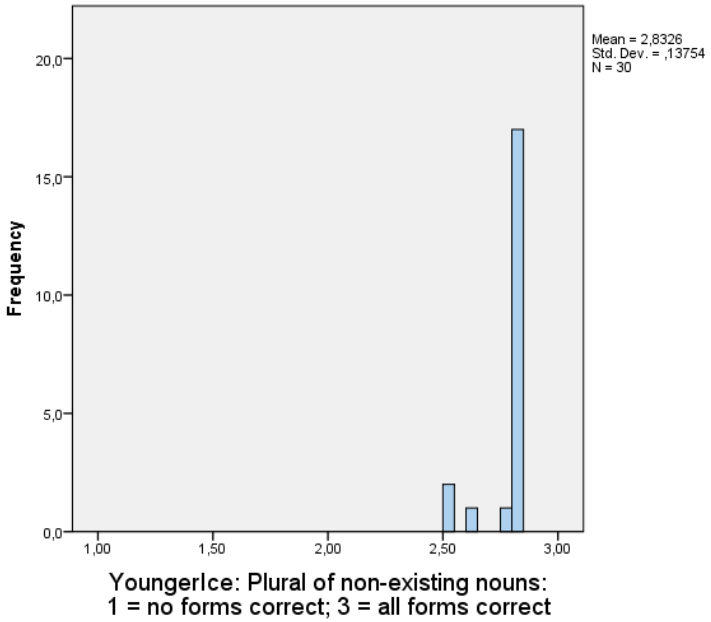


Very little difference between performance on the two sets (mean 2.99 vs. 2.78, mostly due to the nonsense word *buni*).

Plural formation, 7

Performance of IceIce speakers on the plural tests:
Younger speakers (30, av. age 35 years, range 30–41).





Very little difference between performance on the two sets (mean 2.99 vs. 2.83, mostly due to the nonsense word *buni*).

Plural formation, 8

Conclusion:

- Speakers of NAmIce know the plural form of (common) nouns, even irregular ones.
- Speakers of NAmIce have not generally internalized the rules for plural formation, although they do better on the simplest regular nonsense words:

Word:	NAmIce	Older IceIce	Younger IceIce
neli (weak masc.)	60%	93%	93%
kíma (weak fem.)	53%	100%	100%
lún (strong neut.)	47%	100%	100%
kraða (weak fem. uml.)	20%	100%	100%
darga (weak fem. uml.)	13%	100%	100%
kas (strong neut. uml.)	0%	97%	100%

Correct plural forms supplied by speakers of NAmIce and IceIce for the most regular nonsense nouns

Some results: V2 and V3

Well known differences between Icelandic and English:

1. *Position of the finite main verb and a certain class of adverbs in subject-initial clauses* (no "V-to-I" in English, cf. Pollock 1989):

(1) María **talar** alltaf/*alltaf **talar** íslensku við foreldra sína. V2/V3
Mary speaks always/always speaks Icelandic to parents her
'Mary always speaks Icelandic to her parents.'

I'll sometimes refer to this as V2A (V3A) or S-Vf-Adv (S-Adv-Vf)

2. *Position of the finite verb in Topicalization structures:*

(2) a. María **talar** íslensku við foreldra sína. V2
Mary speaks Icelandic to parents her.REFL.POSS
'Mary speaks Icelandic to her parents.'
b. [Við foreldra sína] **talar** María íslensku. V2
to parents her REFL.POSS speaks Mary Icelandic
'To her parents, Mary always speaks Icelandic.'
c. *[Við foreldra sína] María **talar** íslensku. V3

I'll sometimes call this V2B (V3B) or XP-Vf-S (XP-S-Vf)

V2 and V3, 2

Two “exceptions” to the generalizations just stated:

1. V2 with auxiliary verbs (and auxiliary-like verbs) in English

(1) Mary **has** always spoken Icelandic to her parents. “V2”

2. There are some V3-adverbs in Icelandic:

(2) María bara/einfaldlega/kannski/náttúrulega /líka ... **talar** íslensku ... V3
‘Mary just/simply/maybe/naturally/also ... speaks Icelandic ...’

V2 and V3, 3

Acquisition of V2 in Icelandic:

Basic rules about the positioning of finite verbs seem to be acquired early ("early optional infinitive stage", Sigurjónsdóttir 1999, 2005):

(1)	a.	Skotta	**fer**	ekki.	(Eva 1;6:13) V2
		Skotta	goes.IND	not	
		'Skotta [a cat's name] doesn't go.'			
	b.	Maður	stundum	**kokka**.	(Eva1;4:22)
		man	sometimes	cook.INF	
		'The man sometimes cooks.'			

The same goes for V2B (Topicalization, Sigurjónsdóttir 2005):

	XP-Vf-S		XP-VINF-S	
child (and age range)	%	N	%	N
Eva (1;1:1–2;4:16)	96%	350	4%	14
Birna (2;0:19–2;6:13)	99%	74	1%	1

V2 and V3, 4

Violations of both types of V2 had been reported in the literature on NAmIce, especially the second kind (V2B, i.e. Topicalization structures, cf. Haraldur Bessason 1984b, Birna Arnbjörnsd. 2006, Elma Óladóttir 2013):

(1) a. [Í dag] ég **fer** heim. (Bessason 1984b:5) V3B
today I go home

b. Doris stundum **talar** íslensku. (Arnbjörnsdóttir 2006:110) V3A
Doris sometimes speaks Icelandic

c. stundum ég **hugsa** um það (Arnbjörnsdóttir 2006:110) V3B
sometimes I think about that

V2 and V3, 5

Some hypotheses that could be tested cf. Birna Arnbjörnsdóttir, Iris Edda Nowenstein og Höskuldur Þráinsson 2015):

A: Speakers of NAmIce are likely to produce and accept English-type Topicalization structures, i.e. the V3B variant XP-S-Vf.
B: Speakers of NAmIce are likely to produce and accept English-type V3A structures, i.e. the S-Adv-Vf kind.
C: The two kinds of violations of the V2-constraint described here need not go hand in hand)
D: Early and extensive exposure to English during the acquisition period will influence the acquisition of the V2-constraint in a negative way.
E: Limited use of Icelandic, both at home and outside the home, will weaken the V2-constraint).

A and B: **language transfer**.
C: V2A and V2B may not be derived the same way
(pick your favorite variant of **V-to-I**- vs. V-to-C-type proposals)
D: **incomplete acquisition**
E: **attrition**

V2 and V3, 6

Main elitication methods used (after various experiments):

1. **Syntactic tests**, mainly choosing between alternatives: Randomized sentence types read aloud and shown on a computer screen. Example:

V2/V3 and topicalization

María er að læra frönsku. [context sentence]
Mary is studying French
□ hún ætlar
Næsta vetur að læra ítölsku.
□ ætlar hún
Next winter she intends/intends she to study Italian

2. **Comparison with spontaneous speech materials** (life story interviews, elicited narrative (*Frog, Where Are You?, Pear* Story), personal letters ...)

V2 and V3, 7

V2A/V3A: Three types tested:

A: Examples where there is a **clear contrast** between Icelandic and English: S-MainVf-Adv/S-Adv-MainVf.

Selection of the V3-variant by speakers of NAmIce could occur (language transfer).

B: Examples where there **contrast is not so clear** because the finite verb is an auxiliary: S-Aux-Adv/S-Adv-Aux.

Selection of the V3-order not predicted for speakers of NAmIce since it is bad/dispreferred in Icelandic and English.

C: Examples where the **contrast is not so clear** because the adverb is a possible V3-adverb in Icelandic: S-Vf-Adv/S-Adv-Vf.

Here we might expect speakers of NAmIce to select more V3-examples because they would work in both Icelandic and English.

V2 and V3, 8

Relevant test material:

- **One sentence of Type A** (S-MainV-Adv / S-Adv-MainV). Tested on 17 speakers of NAmIce and 15 speakers of each age group of the IceIce speakers (cf. above).
- **Five sentences of Type B** (S-Aux-Adv / S-Adv-Aux). Tested on 16 speakers of NAmIce and 15 speakers of each age group of the IceIce speakers.
- **Two sentences of Type C** (S-Vf-V3Adv / S-V3Adv-Vf). Tested on 16 speakers of NAmIce and 15 speakers of each age group of the IceIce speakers.

V2 and V3, 9

Tabulated results:

Type A: V3 bad in Icelandic but OK in English:

(1) *Guðmundur vinnur mjög mikið*
G works very hard
Hann **vinnur alltaf/alltaf vinnur** fram á kvöld.
he works always/always works until the evening

Word order type selected	Group		
	NAmIce	Older Icelce	Younger Icelce
V2: *vinnur alltaf*	75.5%	100%	93,3%
V3: *alltaf vinnur*	17.6%	0	0
V2+V3	5.9%	0	6,7%

Some language transfer (rather limited)?

V2 and V3, 10

Type B: Five examples, including this one:

(1) *Þórður veit ekkert um hvað bókin er.*
Th. knows not about what the book is
Hann **hefur aldrei/aldrei hefur** lesið bókina.
he has never/never has read the book

Average selection of the word order types:

Word order type selected	Group		
	NAmIce	Older Icelce	Younger Icelce
V2: *hefur aldrei*	88.14%	100%	100%
V3: *aldrei hefur*	9.54%	0	0
V2+V3	2.68%	0	0

V3 is bad in Icelandic and dispreferred in English.

V2 and V3, 11

Type C: Two examples, including this one:

(1) *Við ætlum frá Rochester til Vermont*.
we intend (to go) from Rochester to Vermont
Við **stoppum kannski/kannski stoppum** í New York á leiðinni.
we stop perhaps/perhaps stop in NY on the way

Average selection of the word order types:

Word order type selected	Group		
	NAmIce	Older Icelce	Younger Icelce
V2: *stoppum kannski*	61,25%	100%	96.65
V3: *kannski stoppum*	38,75%	0	0
V2+V3	0	0	3.35

Here V3 should be OK in Icelandic (although almost never selected by the Icelandic speakers) and the corresponding order is also fine in English.

V2 and V3, 12

The V2/V3 order **in Topicalization structures** (V2B/V3B): Four test sentences, including this one:

(1) *Hann borðar köku á hverjum degi.*
he eats cake every day
Núna **vill hann/hann vill** ávexti
now wants he/he wants fruit

Average selection of the word order types:

Word order type selected	Group		
	NAmIce	Older IceIce	Younger IceIce
V2: *vill hann*	60.25%	100%	!00%
V3: *hann vill*	33.4%	0	0
V2+V3	6.35%	0	0

Very clear difference between NAmIce and IceIce.

V2 and V3, 13

The test results are supported by production data:

It is not easy to find genuine V3A-examples (S-Adv-Vf) in NAmIce:

(1)

a.	hún **aldrei sá** mosquito		(male, 71)
	she never saw mosquito		
	'she never saw a mosquito'		
b.	ég **líka tók** [...] lexíur á háskólanum		(male, 25)
	I also took lessons on university.DEF		
	'I also took lessons at the university'		
c.	hún **kannski skildi** það		(female, 77)
	she perhaps understood it		
d.	hann **kannski skilur** eitthvað		(female, 79)
	he perhaps understands something		

- The adverbs in b,c,d are **potential V3-adverbs** in Icelandic.
- Most of the V3-examples found in Jóna's letters (cf. Björnsdóttir 2014 and below) are of this kind.

V2 and V3, 14

It is easy to find V3B-examples in NAmIce (XP-S-Vf):

(1)

a.	hérna	**hann**	**er**	að ...	að ...	hjálpa	hundinn	upp	(male, 72)
	here	he	is	to	to	help	dog.DEF.ACC	up	
	'here he is helping the dog up'								
b.	stundum	**ég**	**er**	að hugsa	í	ensku			(male, 71)
	sometimes	I	am	to think	in	English			
	'sometimes I am thinking in English'								
c.	þá	**strákurinn**	**er**	á	ee ...	the head			(female, 88)
	then	boy.def		is	on				
	'then the boy is on the head'								
d.	líka	**ég**	**hefur**	gert	mikið	vinnu	með	ætta- ættin	(female, 75)
	also	I	have	done	much	work	with	family.DEF	

- This suggests that V2 in topic-initial clauses is indeed different from V2 in subject-initial clauses.

V2 and V3, 15

Are the problems with topic-initial clauses due to **incomplete acquisition** and **language attrition**? We checked background:

- when X began to speak Icelandic
- how often X used Icelandic the past year
- when X began to speak English
- when X began hearing Icelandic around
- when X began hearing English around
- was X able to read in Icelandic before school age?
- use of Icelandic at home when growing up
- **use of English at home when growing up**
- how often X had been to Iceland
- does X read books or newspapers in Icelandic?
- does X follow Icelandic news on radio or TV or Internet? ...

Very little difference between the speakers w.r.t. many of these features but **highly significant correlation with "use of English at home when growing up"** ($r = 0.504$, $p = 0.003$). = **Incomplete acquisition** (early interference)?

Some results: Case

- It has been reported in the literature that **case** often causes problems for speakers of heritage languages (cf. e.g. Bennamoun et al. 2010 and references cited there).
- There have been some reports in the literature that speakers of NAmIce have problems with case (Birna Arnbjörnsdóttir 2006, Sigríður Mjöll Björnsdóttir 2014):

(1)	a.	**Litli stúfurinn** í Toronto leið vel.	(SMB 2014:51)
		the little guy(N) in Toronto felt good	[Nom for Dat]
	b.	Ég sakna svo mikið **bréfunum** frá þér.	(SMB 2014:48)
		I miss so much the letters(D) from you	[Dat for Gen]

Case, 2

Brief review (see e.g. Yip, Maling and Jackendoff 1987 , Barðdal 2001, 2011, Eythórsson 2002, Jónsson 2003, 2009, Maling 2002, Sigurðsson 2004, Thráinsson 2007, etc., etc.):

Subject case in Icelandic:

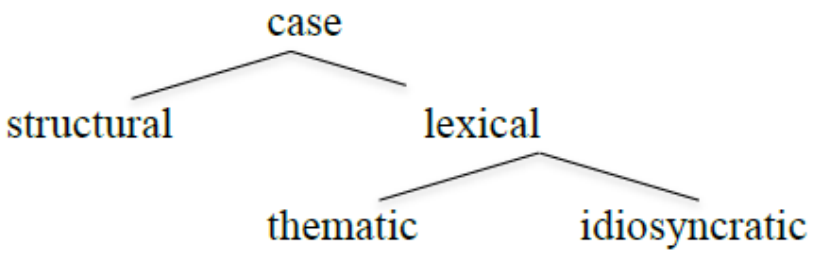
- **Nominative** is the default subject case in Icelandic.
- **Dative subjects** are not uncommon, especially on experiencer arguments.
- **Accusative subjects** are rare and are and sometimes replaced by Dat (Dative Substitution for experiencers) or Nom subjects (Nom Substitution for themes)
- **Genitive subjects** are very rare.

Object case in Icelandic:

- **Nominative** objects depend on dative subjects.
- **Accusative** is arguably the default object case in Icelandic.
- **Dative objects are very common** and productive (new verbs, substitution of Dat for earlier Acc).
- **Genitive objects** are very rare and apparently on the way out.

Case, 3

A common classification of morphological case in Icelandic (cf. Yip et al. 1987, Jónsson 2003 and many others, but pace Barðdal 2011):



Thematic roles of case marked subjects in Icelandic: No thematic restrictions on Nom subjects (cf. Thráinsson 2007:206):

	thematic role:				
subject case:	agent	exper.	goal	source	theme
nominative	+	+	+	+	+
accusative		(+)			(+)
dative		+	+		(+)

Case, 4

A proposal meant to account for historical development and synchronic variation of morphological case in Icelandic: **The Case Directionality Hypothesis** (Eythórsson 2002, based on ideas in Yip et al. 1987, Jónsson 2003, 2009, Maling 2002 etc.):

(1) Case Directionality Hypothesis (CDH)

a. lexical case → structural case

b. idiosyncratic lexical case → thematic lexical case

Questions:

- How/When does this happen? [It doesn't always.]
- Can we learn something from Heritage Icelandic about this?

Case, 5

Same elicitation techniques as before and same subject groups:

1. Syntactic tests, mainly **choosing between alternatives**. Sentences (read aloud and shown on a computer screen):

(1) Það er langt síðan ég ferðaðist síðast.
it is long since I travelled last
- □ Ég langa
- □ Mig langar aftur í ferðalag
- □ Mér langar
- □ Mín langar

I (N/A/D/G) want to travel again.

2. Comparison with **spontaneous speech materials** (life story interviews, elicited narrative (*Frog, Where Are You?, Pear* Story), personal letters (SMB 2014)...)

Subject case

Subject case in NAmIce – some predictions (based on what we know about morphological case in Icelandic):

- Speakers of NAmIce should typically **select the default Nom** as the subject case, especially for agents.
- Speakers of NAmIce might also **substitute the default Nom for thematic Dat experiencer** subjects.
- Speakers of NAmIce might **substitute the more regular Dat for Acc** experiencer subjects (Dative substitution (or "Dative sickness", frowned upon in schools in Iceland).
- Some speakers of NAmIce **might not have a clue** what to do with case and make random errors not found in the language of native speakers.

Subject case, 2

Verbs taking **Nom agentive** subjects: Three examples *(borða* 'eat'*, vinna* 'work', *sauma* 'sow') including:

(1) *Fiskur er hollur matur.*
fish is healthy food
Ég/Mig/Mér/Mín borða(r) fisk á hverjum degi.
I(N/A/D/G) eat fish every day.

Average case selection:

Case selected	Group		
	NAmIce	Older Icelce	Younger Icelce
Nom	82.5%	100%	100%
Acc	8.7%	0	0
Other	8.8%	0	0

Subject case, 3

Verbs taking **Dat experiencer subjects**. Three examples (leiðast 'be bored by', *finnast* 'find', *þykja* 'find'), incl.:

(1) *Þetta var hryllingsmynd*.
this was a horror movie
Ég/Mig/Mér/Mín leiðast svona bíómyndir.
I(N/A/D/G) a am-bored-by such movies

Average case selection:

Case selected	Group		
	NAmIce	Older IceIce	Younger IceIce
Nom	41.6%	0	0
Acc	11.9%	2.2%	0
Dat	33.7%	97.8%	100%
Other	12.8%	0	0

Subject case, 4

Verbs taking **Acc experiencer subjects**. Four examples (*langa* 'want', *vanta* 'want, need', *svíða* 'have a burning feeling', *klæja* 'itch'), including:

(1) *Það er langt síðan ég ferðaðist síðast.*
it's been a long time since I travelled last
Ég/Mig/Mér/Mín langa(r) aftur í ferðalag.
I(N/A/D/G) want again on travel

Average case selection:

Case selected	Group		
	NAmIce	Older Icelce	Younger Icelce
Nom	54.1%	0	0
Acc	9.9%	75%	90%
Dat	25.3%	21.7%	8.3%
Other	10.7%	3.3%	1.7%

Subject case, 5

The test results are supported to some extent by production data (interviews, narratives (*Frog, Where Are You?*)):

Acc does occur with agentive verbs: ***Froskana*** *er að horfa* 'the frogs(A) are looking' ... and a few other examples

Dat experiencer subjects of verbs like *leiðast* 'be bored by', *finnast* 'find', *þykja* 'find':

- fairly well preserved: 7 instances in a sample of 9
- > Nom in 1 example: ***hann*** *þykir* 'he(N) finds'
- > Acc in 1 example: ***strákinn*** *leiðist* 'the boy(A) is bored'

Acc experiencer subjects of verbs like *langa* 'want', *vanta* 'want, need'*:*

- not as well preserved: 3 instances in a sample of 11
- > Nom in 4 examples, e.g. ***hundurinn*** *langar* 'the dog(N) wants'
- > Dat in 4 examples, e.g. ***henni*** *langar* 'she(N) wants'

Object case

A brief review:

- **Accusative** is arguably the default object case in Icelandic. Hence there are no thematic restrictions on Acc objects (cf. nominative subjects).
- **Dative** is at least a semi-regular case for certain thematic roles of objects. It is productive, as shown by the fact that many new verbs take Dat objects (cf. Barðdal 2001, 2011, Maling 2002, Jónsson 2009).
- **Genitive** objects are idiosyncratic and on the way out.

Object case, 2

Object case in NAmIce – some predictions (based on what we know about morphological case in Icelandic):

- Speakers **should not in general select Nom as an object case** – unless case is a mystery for them – since Nom objects only occur with Dat subjects
- Speakers **should do well on Acc objects** since Acc is arguably the default object case in Icelandic.
- Speakers might also **do pretty well on Dat objects where they are "supported" by the thematic** role of the object (verbs of helping, praising, throwing ..., cf. Barðdal 2001, 2011, Maling 2002, Jónsson 2009, Thráinsson 2007).
- Speakers **might substitute Acc objects for Dat objects** if Acc is the default object case.
- Speakers **should not do well on Gen objects**.

Object case, 3

Verbs taking **Acc objects**: Four examples (*velja* ‘select’, *hitta* ‘meet’, *sjá* ‘see’, *elta* ‘chase’), including:

(1) *Þjófarnir reyndu að flýja*.
the thieves tried to escape
Lögreglan elti **þeir/þá/þeim/þeirra**.
the police chased them(N/A/D/G)

Average selection of case:

Case selected	Group		
	NAmIce	Older Icelce	Younger Icelce
Nom	38,5	1,7	0
Acc	35,7	98,3	100%
Dat	13,0	0	0
Gen	9,6	0	0
Other	3,3	0	0

Nom a general default case?

Object case, 4

Verbs taking **Dat objects**: Four examples (*bjarga* ‘save’, *hrósa* ‘praise’, *kasta* ‘throw’, *henda* ‘throw (away)’), including:

(1) *Maðurinn er mjög hugrakkur*.
the man is very brave
Hann bjargaði **ég/mig/mér/mín** í óveðrinu.
he saved me(N/A/D/G) in the blizzard

Average case selection:

Case selected	Group		
	NAmIce	Older Icelce	Younger Icelce
Nom	13,6	0	0
Acc	36,5	0	0
Dat	38,9	100	100
Gen	5,1	0	0
Other	4,5	0	0

Object case, 5

Verbs taking **Gen objects**: Three examples (*sakna* 'miss', *spyrja* 'ask', *krefjast* 'demand'), including:

(1) *Það er erfitt að vera langt í burtu.*
it is difficult to be far away
Ég sakna **þú/þig/þér/þín**.
I miss you(N/A/D/G)

Average case selection:

Case selected	Group		
	NAmIce	Older Icelce	Younger Icelce
Nom	12,7	0	0
Acc	**47,6**	4,4	2,2
Dat	17,8	0	0
Gen	**19,7**	95,6	88,9
Other	0	0	8,9

Object case, 6

The test results are supported to some extent by production data (interviews, narratives (*Frog, Where Are You?*)): Mistakes of most of the types found in the test results can also be found in the production data, including mistakes where case marking is regular:

- Nom for regular Acc: *sjá* ***froskurinn*** 'see the frog(N)'
- Acc for regular Dat: *henda* ***hann*** 'throw him(A)'

(and case marking of prepositional objects seems fairly random)

Subject and object case

Question:

- Are the problems that speakers of NAmIce have with case due to incomplete acquisition or attrition — or is subject case different from object case in this respect?

An interesting "case in point" (cf. Sigríður Mjöll Björnsdóttir 2014):

- Jóna (born to Icelandic parents in Canada 1890) wrote 152 letters (approx. 82.000 words) to her half-sister in Iceland 1907–1980.
- Husband Norwegian. Doesn't seem to have used Icelandic much at home.
- Her case marking is **pretty good** throughout, although there are are slightly more case marking errors in the later letters, especially in the irregular cases (genitive objects of verbs, objects of prepositions). Also some instances of substituting Dat for Acc objects (hypercorrection?)

So maybe the extensive case marking errors that the NAmIce speakers make are mainly due to **incomplete acquisition.**

Some results: Sentence processing

Issues:

- Speakers of heritage languages have been found to have problems with the processing (semantic interpretation) of **relative clauses**, especially object relatives (Bennamoun et al. 2010, w. references).
- Research on Broca's aphasics has revealed that certain types of **syntactically complex sentences** are difficult for them to process (Magnúsdóttir 2000, w. references), e.g.:
  - **Passives** are harder than actives (passives have **object gaps**).
  - Clefts w. **object gaps** are more difficult to process than those w. subject gaps.
  - Wh-questions can pose problems, especially **object gaps**.
  - Topicalization structures are difficult, especially those where the interpretation depends on the **case marking** of the arguments (inversion of subject and a main verb): *Stráknum hrinti stelpan* "the boy(D) the girl(N) pushed."

Sentence processing, 2

Why might it be interesting to investigate this further in the language of heritage speakers?

- Assuming that the complex sentences are not all equally difficult/ easy to process, what characterizes the difficult ones?
  - non-canonical word order? (not Agent – Predicate – Patient)?
  - object gaps? [can be the same thing]
- What kinds of linguistic clues can the heritage speakers make use of? Case marking?
- How similar to/different from "**normal adult speakers**" and aphasic speakers are heritage speakers in this respect? [Cf. e.g. Grodzinsky's proposal 1986: Aphasics do not "have" traces, hence they cannot interpret (object) gaps.]

Sentence processing, 3

A picture identification task:

a.	Stelpan eltir strákinn. ‘The girl(N) chases the boy(A).’	Act
b.	Strákurinn er eltur af stelpunni. ‘The boy(N) is chased by the girl(D).’	Long Pass
c.	Strákurinn er eltur. ‘The boy(N) is chased.’	Short Pass
d.	Það er elt strákinn. “there is chased the boy(A)”	New Pass
e.	Hvaða stelpa eltir strákinn? ‘Which girl(N) chases the boy(A)?’	Subj-*wh*
f.	Hvaða strák eltir stelpan? “which boy(A) chases the girl(N)”	Obj-*wh*
g.	Það er stelpan sem eltir strákinn. ‘It is the girl(N) that chases the boy(A)’	Subj-cleft
h.	Það er strákinn sem stelpan eltir. ‘It is the boy(A) that the girl/N) chases’	Obj-cleft
i.	Strákinn er stelpan að elta. “the boy(A) is the girl(N) chasing”	Top w. aux.
j.	Strákinn eltir stelpan. “the boy(A) chases the girl(N)”	Top w. main

Sentence processing, 4

The picture identification task:

- 33 speakers of NAmIce
- 60 sentences (10 types x 6 of each)
- 6 different verbs, introduced at the beginning of the test with one relevant picture each, all involving a boy and a girl:
  - *lemja* ‘hit’
  - *greiða* ‘comb (hair)’
  - *mála* ‘paint (face)’
  - *klappa* ‘pat (on the head)’
  - *kitla* ‘tickle’
  - *ýta* ‘push (on a swing)’
- The sentences/pictures were presented in a random order, the sentence spoken clearly and an English translation of the verb typically given (e.g. *lemja* ‘hit’).

Sentence processing, 5

For speakers of NAmIce, the sentences appear to fall into four categories w.r.t. the ease/difficulty of processing:

1. **Easiest** (97–99.5% correct):
   Active,Subject *wh*-question, Subject cleft, New Passive
2. Better than chance performance (about 60–70% correct)
   Object cleft, Passives (long and short)
3. About 30% correct:
   Topicalization with an auxiliary verb
4. **Most difficult** (only about 10% correct):
   Object *wh*-questions, Topicalization with a main verb (the only clue is the case marking of the two arguments in both instances)

Sentence processing, 6

The results are rather similar to those obtained for aphasic patients.

Possible reasons:

- **The easiest** constructions have a canonical word order (Agent before verb or Patient after main verb (**New Pass**)).
- Maybe the relatively difficult Top. with an auxiliary verb is confusing because it has two arguments before the main verb.
- **The most difficult** constructions rely mostly on case marking
  [Some aphasics can make use of clues of this kind but not all. Very few of the Icel. heritage speakers could, which is not surprising.]

Sentence processing, 7

A possibility worth considering:

- The Icelandic heritage speakers participating in this part of the test were mostly quite old (mean age 73, range 35–95). Is it possible that some of their processing problems were just a factor of their old age?

- What does the comparison with the two groups of IceIce speakers tell us?
  - 30 older speakers (average age 77 years, range 69–89)
  - 30 younger speakers (average age 35, range 30–41)

Sentence processing, 8

Performance of the three groups: Percentage correct

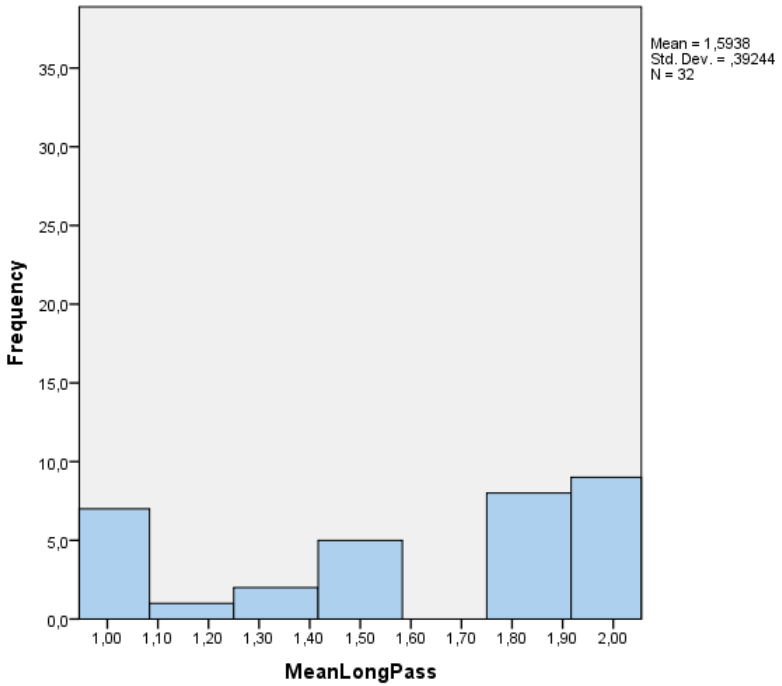
Construction	NAmIce	Older IceIce	Younger IceIce
Active	99.5%	100%	100%
Subject *wh*-	98.0%	100%	100%
Subject clefts	97.0%	99.4%	100%
New Passive	97.0%	97.2%	100%
Object cleft	68.9%	92.8%	98.3%
Passive – long	59.4%	91.7%	100%
Passive – short	58.1%	98.9%	100%
Topicalization w. aux	30.3%	94.4%	98.9%
Object *wh*-	10.6%	98.9%	100%
Topicalization w. main verb	9.7%	85.6%	98.9%

Slight deterioration of the processing abilities of the older IceIce

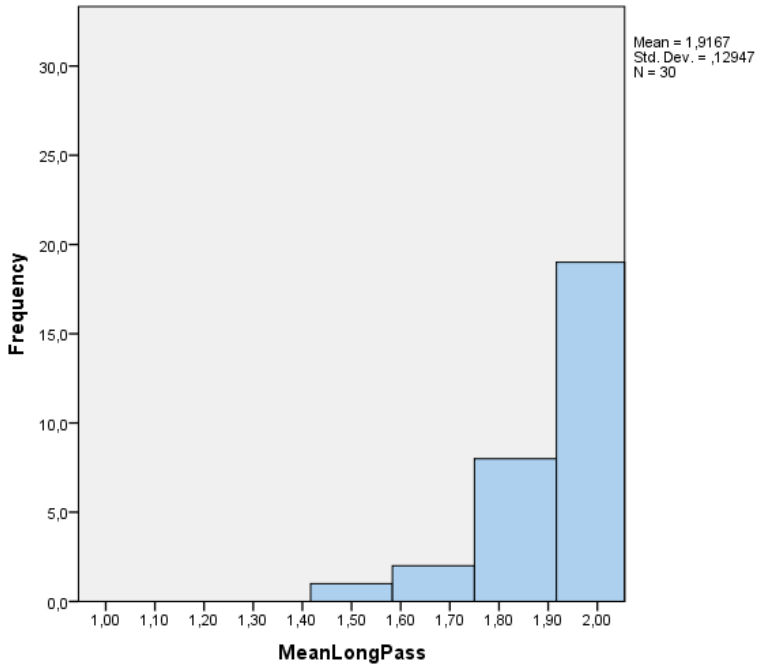
Sentence processing, 9

Distribution of scores for Long passives:

NAmIce:



Older IceIce:

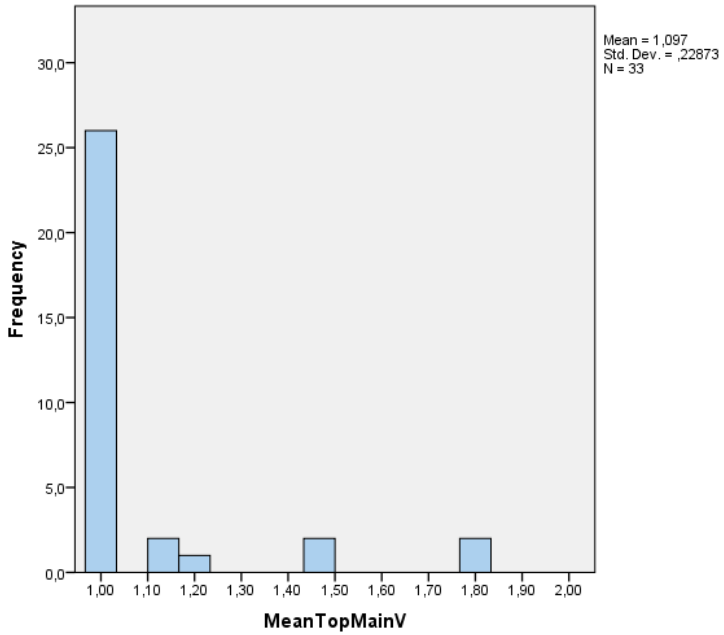


Means: 2 = all correct, 1 = none correct

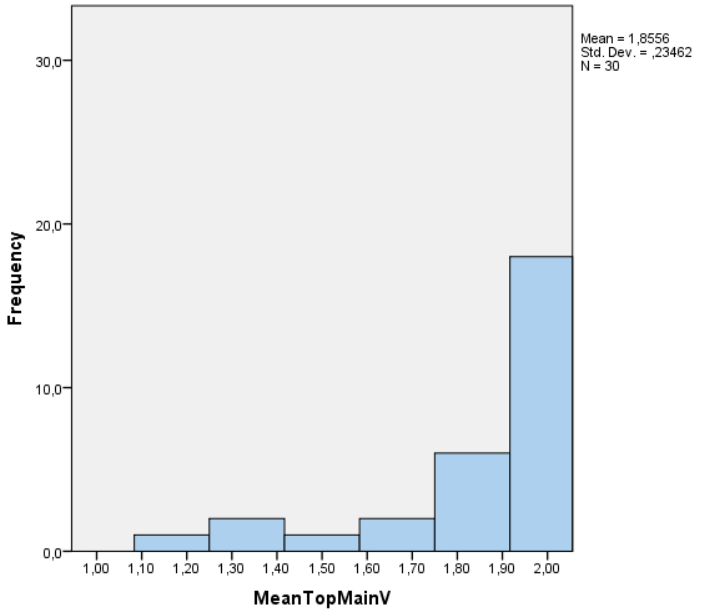
Sentence processing, 10

Distribution of scores for Topicalization w. main verb

NAmIce:



Older IceIce:



Means: 2 = all correct, 1 = none correct

Summary

We have learned that speakers of NAmIce:

- Typically know the plural forms of common nouns but have not mastered rules for regular plural formation like native speakers.
- Sometimes violate “the V2-constraint”, especially in Topicalization structures. This is more common if English was used at home when these speakers were growing up.
- Sometimes make mistakes in subject case assignment, including mistakes that native speakers never make, e.g. selecting and using Acc as a subject case for agents.
- Often make mistakes in object case assignment, including selection/use of Nom as an object case and making mistakes in regular case assignment.
- Have problems interpreting syntactically complex sentences, especially when the interpretation depends on grammatical clues like case. But this also holds, although to a much more limited extent, of older and healthy native speakers.

References

Arnbjörnsdóttir, Birna. 2006. *North American Icelandic. The Life of a Language*. University of Manitoba Press, Winnipeg.

Arnbjörnsdóttir, Birna, Iris Edda Nowenstein og Höskuldur Þráinsson. 2015. V2 and V3 Order in North-American Icelandic. [Under review.]

Barðdal, Jóhanna. 2001. *Case in Icelandic – A Synchronic, Diachronic and Comparative Approach*. Doctoral dissertation, Department of Scandinavian Languages, Lund University, Lund.

Barðdal, Jóhanna. 2011. Lexical vs. Structural Sase: a False Dichotomy. *Morphology* 21:619–654.

Benmamoun, Elabbas, Silvina Montrul and Maria Polinsky. 2010. Prolegomena to Heritage Linguistics. Ms., University of Illinois and Harvard University. Accessible at http://scholar.harvard.edu/mpolinsky/publications/white-paper-prolegomena-heritage-linguistics.

Bessason, Haraldur. 1984a, b. Að rósta kjötið og klína upp húsið. [To roast the meat and clean up the house.] *Lesbók Morgunblaðisins* 16. júní bls. 4-5 og 23. júní bls. 11–12.

Björnsdóttir, Sigríður Mjöll. 2014. “Hún er svo montin af að vera íslenskt.” Fallmörkun og samræmi í vesturíslensku erfðarmáli. [‘She is so proud of being Icelandic. Case marking and agreement in NAmIce.’] MA-thesis, University of Iceland, Reykjavík.

References

Eythórsson, Thórhallur. 2002. Changes in Subject Case-Marking in Icelandic. David Lightfoot (ed.): *Syntactic Effects of Morphological Change*, 196–212. Oxford University Press, Oxford.

Grodzinsky, Yosef. 1986. Language Deficits and the Theory of Syntax. *Brain and Language* 27:135–159.

Jónsson, Jóhannes Gísli. 2003. Not so Quirky. On Subject Case in Icelandic. In Ellen Brandner and Heike Zinsmeister (eds): *New Perspectives in Case Theory*, pp. 127−163. CLSI Publications, University of Chicago Press, Chicago.

Jónsson, Jóhannes Gísli. 2009. Verb Classes and Dative Objects in Insular Scandinavian. Jóhanna Barðdal and Shobhana Chelliah (eds.): *The Role of Semantics and Pragmatics in the Development of Case*, 203–224. Benjamins, Amsterdam.

Magnúsdóttir, Sigríður. 2000. *On Grammatical Knowledge in Agrammatism. Evidence from Icelandic*. Doctoral dissertation, Boston University, Boston.

Maling, Joan. 2002. Það rignir þágufalli á Íslandi. Verbs with Dative Objects in Icelandic. *Íslenskt mál* 24:31−105.

Óladóttir, Elma. 2013. *Daisy stundum talar íslensku. Sagnfærsla í vesturíslensku*. [Daisy sometimes speaks Icelandic. Verb movement in NAmIce.] MA-thesis, University of Iceland, Reykjavík.

References

Pollock, Jean-Yves. 1989. Verb Movement, Universal Grammar and the Structure of IP. *Linguistic Inquiry* 20:365–424.

Sigurjónsdóttir, Sigríður. Sigurjónsdóttir, Sigríður. 1999. Root Infinitives and Null Subjects in Early Icelandic. In Annabel Greenhill, Heather Littlefield and Cheryl Tano (eds): *Proceedings of the 23r Annual Boston University Conference on Language Development*, pp. 630–641. Cascadilla Press, Somerville, MA.

Sigurjónsdóttir, Sigríður. 2005. The Different Properties of Root Infinitives and Finite Verbs in the Acquisition of Icelandic. In Alejna Brugos, Manuella R. Clark-Cotton and Seungwan Ha (eds): *Proceedings of the 29th Annual Boston University Conference on Language Development*, pp. 540–551. Cascadilla Press, Somerville, MA.

Sigurðsson, Halldór Ármann. 2004. Icelandic Non-Nominative Subjects: Facts and Implications. In Peri Bhaskararo and K. V. Subbarao (eds): *Non-Nominative Subjects* 2, pp. 137–159. John Benjamins, Amsterdam.

Thráinsson, Höskuldur. 2007. *The Syntax of Icelandic*. Cambridge University Press, Cambridge.

Yip, Moira, Joan Maling and Ray Jackendoff. 1987. Case in Tiers. *Language* 63:217–250.