



# Testing an “Apparent Time Prediction” in Real Time

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  2. **I-language and E-language**
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  4. The hypothesis
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- **Concluding remarks**



# Introduction

A basic question for our project(s):

- **Does “linguistic change in real-time” exist?**

Kroch (2001:699 (my emphasis)):

- Language change is by definition a **failure in the transmission across time of linguistic features**. Such failures, in principle, could occur **within groups of adult native speakers** of language, who for some reason substitute one feature for another in their usage, as happens when new words are coined and substituted for old ones; but in the case of syntactic and other grammatical features, such innovation by monolingual adults is largely unattested. Instead, **failures of transmission seem to occur in the course of language acquisition**; that is, they are failures of learning.



# An Overview of Positions

## Change vs. Diffusion:

- Some linguists (e.g. Hale 2007) make a sharp distinction between (actual) **change** (i.e., the original “**innovation**”, which may typically (always?) be the result of “imperfect transmission”) and its **diffusion** (i.e., how/why the innovation spreads to new generations/other speakers ...).
- **Sociolinguists** are typically interested in **diffusion** (in Hale’s sense), i.e. how and why certain variants spread throughout the linguistic community, whereas **generative linguists** tend to be more interested in the **innovation** (Hale’s **change**) and how/why it has come about.
- This is related to the distinction between **I-language** and **E-language**.



# An Overview..., 2

## I-language vs. E-language:

- **I-language** is the internal(ized)/individual language that the speaker acquires, his/her knowledge of the language.
- By contrast, **E-language** (E for external(ized)) is pretty much everything else we mean by *language* (e.g., when we say: “*vatn* is not a word in the English **language**.”)
- Chomsky (1986 and later, see also Isac and Reiss 2008 and many others) has argued that **I-language** is/should be main object of study of linguistic theory.



# An Overview..., 3

A reformulation of the previous question:

- Does — or can — **linguistic change** involve the change of the language (“linguistic knowledge”) that speakers have acquired, i.e. their **I-language**, or is linguistic change proper only involved when a speaker of a new generation acquires an **I-language** different from that of members of previous generations because of some “innovation” or “imperfect transmission” (cf. the quote from Kroch 2001)?

Different opinions on this, cf. below.



# An Overview..., 4

- **Halle 1962:** Adults **change their language to some extent but not the actual linguistic system** (i.e., they may change their use/usage in various ways). Children then interpret these changes as evidence for a different underlying system. Then we have a change in the linguistic system with a new generation.
- **Labov 1963, 1966** and later: Assumed that the **linguistic knowledge was relatively stable** after the acquisition period and introduced the concept of **apparent-time** to describe possible differences between groups of speakers (cf. below).
- **Weinreich, Labov and Herzog (WLH) 1968:** Emphasized the relationship between **linguistic change** and **variation**. The believed that **diffusion of variants** depended on sociological factors.



# An Overview..., 5

- **Andersen 1973** wanted to distinguish between **rule acquisition** based on (incomplete) data (which may involve **reinterpretation** or **misinterpretation**) and **rule generalization** which extends the rule to new cases. In both instances we have a **change** but of different nature (Anderson used the terms **abductive** and **deductive change** ).
- **Hale (2007)**, too, sees **language acquisition** as the locus of linguistic change and claims that change “**does not take any time**” and thus there is no such thing as a “change in progress”. Change occurs when the child “**misinterprets**” the data, but the **diffusion** of change to the linguistic community may take time. New generations adopt the innovation (it is in their input). Adults can also “learn a new dialect”, e.g. the standard dialect, but that is not really “linguistic change”.



# Some data and a hypothesis

## The data sources

Project	Period	Type of data	Elicitation	Subjects	Age groups
1. BG	1940s	phonol. variation	production (reading texts)	6520+	teenagers
2. RÍN	1980s	phonol. variation	production (pictures, texts)	3000+	15–70+
3. RAUN (the phonol. part)	2012–2013	phonol. variation	production (pictures, texts)	≈550	46–80+

*Table 1: Three phonological surveys (cf. MG's paper at this conf.)*

In this talk I will almost exclusively be talking about data from projects 2 (RÍN) and 3 (RAUN), cf. the next slide.

# Some data..., 2

## Schematic comparison of the three phonological surveys

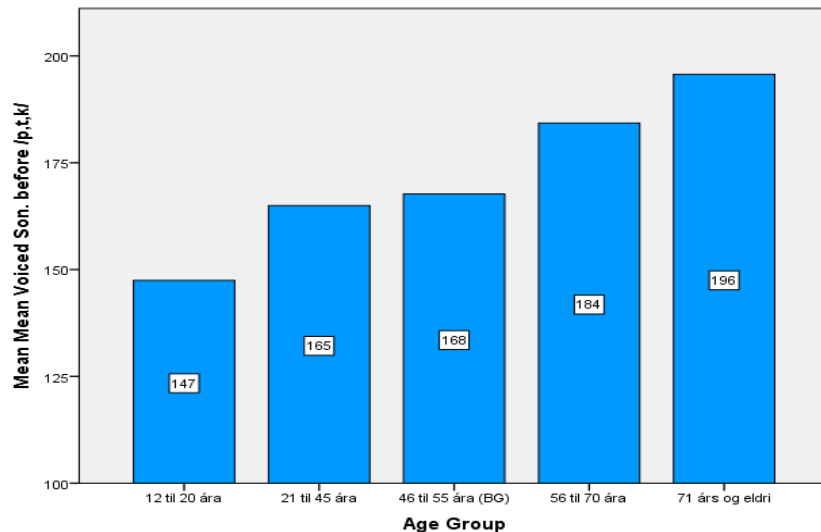
age groups	1940+	1980+	2010+
teenagers	BG	RÍN	(RAUN)
age group 21–45		RÍN	RAUN
age group 46–55		RÍN	RAUN
age group 56–70		RÍN	(RAUN)
71+		RÍN	RAUN

The diagram illustrates the relationship between the three surveys. Arrows indicate repeated interviews with the same subjects: from BG to RÍN (age group 21–45), from RÍN (age group 21–45) to RÍN (age group 46–55), from RÍN (age group 46–55) to RÍN (age group 56–70), and from RÍN (age group 56–70) to RAUN (age group 71+). Circles highlight the subgroups primarily under discussion: a circle around RÍN and RAUN in the 21–45 age group, another circle around RÍN and RAUN in the 46–55 age group, and a third circle around RAUN in the 71+ age group.

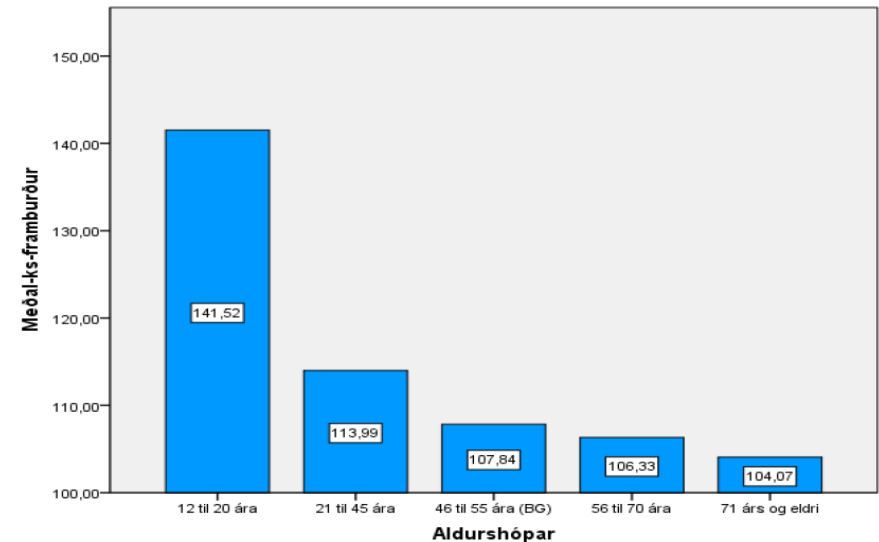
*Table 2: Subject groups in the three phonological variation studies. Arrows and colors indicating repeated interviews with the same subjects and circles showing the subgroups mainly under discussion here.*

# Some data..., 3

## Evidence for “linguistic change in apparent time”?



*Fig. 1: Voiced sonorants before /p,t,k/*  
Correlation w. age:  $r = 0.385$ ,  $p < 0,001$   
 $N > 300$  (area in Northeastern Icel., cf. below)



*Fig. 2: ks-pronunciation*  
Correl. w. age:  $r = -0.422$ ,  $p < 0.001$   
 $N \approx 3.000$  (the whole country)

- 100 = the phonological feature **never** occurred in the subjects' speech sample.
- 200 = the phonological feature **always** occurred where possible in the subjects' speech sample

# Some data..., 4

## A question:

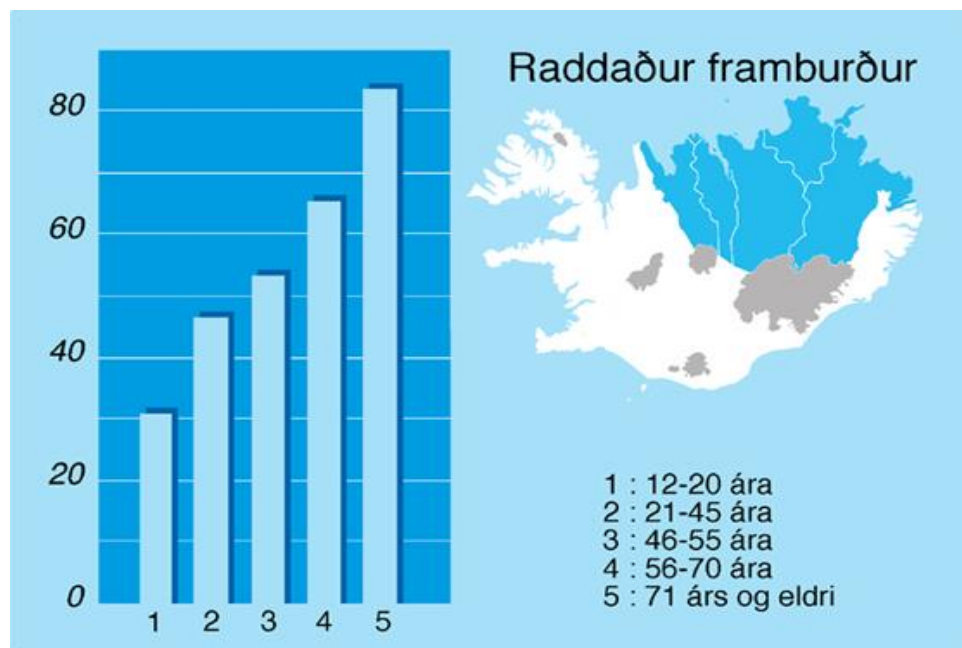
Could *figs. 1–2* represent **age-grading** rather than linguistic **change in apparent-time**? What would that mean?

- Fig. 1:* **Voiced sonorants** before /p,t,k/ (e.g. *mjó***/k** ‘milk’) would then be something that speakers gradually develop.
- Fig. 2:* **ks-pronunciation** (e.g. *va***x***a* ‘grow’) would be a “habit” that speakers “outgrow” (cf. Höskuldur and Kristján 1992, Kristján and Höskuldur 2003).

# Some data..., 5

More on the “voiced” (vs. voiceless) pronunciation:

- “**Voiced** pronunciation”: Voiced /l,m,n/ before /p,t,k/: *mjó**l**k* ‘milk’, *la**m**pi* ‘lamp’, *ba**n**ki* ‘bank’ (and /ð/ before /k/: *ma**ð**kur* ‘worm’). Distribution of these variants in the 1980s (RÍN)



*Fig. 3: Voiced sonorants in North-Eastern Iceland in RÍN*



## Some data..., 6

### Question raised by the data just surveyed:

- Is the voiced pronunciation retreating because the **new generations do not acquire it** or are the **speakers in the region gradually giving it up** (or both)?

# Some data..., 7

Results from an old study (Höskuldur Thráinsson 1980):

	BG 1942	HTh 1980		
Variant	age ≤ 20	age ≤ 20	age 21-45	age > 45
voiced	76%	20%	40%	55%
voiceless	8%	25%	0%	4%
mixed	16%	55%	60%	41%
Total	100% (N 25)	100% (N 20)	100% (N 10)	100 (N 22)

*Table 3: The percentage of speakers at Lake Mývatn having a “purely voiced”, “purely voiceless” and “mixed” pronunciation in 1942 and 1980 (BG’s classification, cf. MG’s paper)*



# Some data..., 8

The first “real-time” comparison (Höskuldur 1980):

Variant	BG 1942	HTh 1980
voiced	9	5
voiceless	1	1
mixed	0	4
Total:	10	10

*Table 4: Comparison of the pronunciation of 10 speakers in 1942 and 1980*





## Some data..., 9

**An observation** on the “mixed” pronunciation at Lake Mývatn (Höskuldur 1980):

Omitting /r/ + /p,t,k/ clusters (every speaker of Icelandic devoices /r/ in this context) and /lt/ clusters (every Icelander has some devoicing in such clusters) the following holds of sonorant devoicing for the speakers with “mixed voicing” surveyed in 1980:

- /l/ is devoiced before /p,k/ **42%** of the time
- /n/ is devoiced before /(p),t,k/ **22%** of the time
- /m/ is devoiced before /p,t,k/ **20%** of the time



# Some data..., 10

Höskuldur's "Simplification Hypothesis" (1980:358):

- The most "restrictive" dialect w.r.t. sonorant devoicing contains a very complex devoicing rule (or rules).\* The development of devoicing in Icelandic proceeds in such a way that this rule is simplified in several steps. Hence it should be possible to describe this development in terms of different "stages" of such a simplification process.

\*See Baldur Jónsson 1982 for some details.



# Some data..., 11

An informal description of the rules (or stages):

1. Devoice /l/ before /t/ “some of the time”.
2. Devoice /l/ before /t/ “all the time”.
3. Devoice /l/ before all the “hard” stops /p,t,k/ (= devoice all non-nasal sonorants before all hard stops).
4. Devoice all sonorants before all hard stops.



## Some data..., 12

Initial support for the hypothesis in the data from the Mývatn area (Höskuldur 1980:360):

- Devoicing of /lt/-clusters is often **generalized** to all contexts [not made very clear in the paper]
- About seven “truly mixed” speakers basically **devoiced only /l/ before /p,k/** and not /m,n/ before /p,t,k/ [= generalization of non-nasal sonorant devoicing].
- When speakers who were classified as having “voiced” pronunciation “exceptionally” produced devoiced sonorants (other than /r/ and), it was **usually /l/ before /p,k/** (9 instances out of a total 11).



# Some data..., 13

## Note:

- It was not made very clear in the 1980-paper whether or not there was evidence in support for the “Simplification Hypothesis” as a principle holding of “real-time change”.

The hypothesis to be tested in this paper (cf. the abstract):

- When speakers gradually lose the “voiced pronunciation”, they typically do it by **systematically generalizing the devoicing rule** that they already had.



# The hypothesis tested on new data

## Some predictions:

- The devoicing hierarchy should be found in the relevant areas:

*frequent devoicing*

*less frequent devoicing*

/lt/ > /l+/p,t,k/ > /m,n/ + /p,t,k/

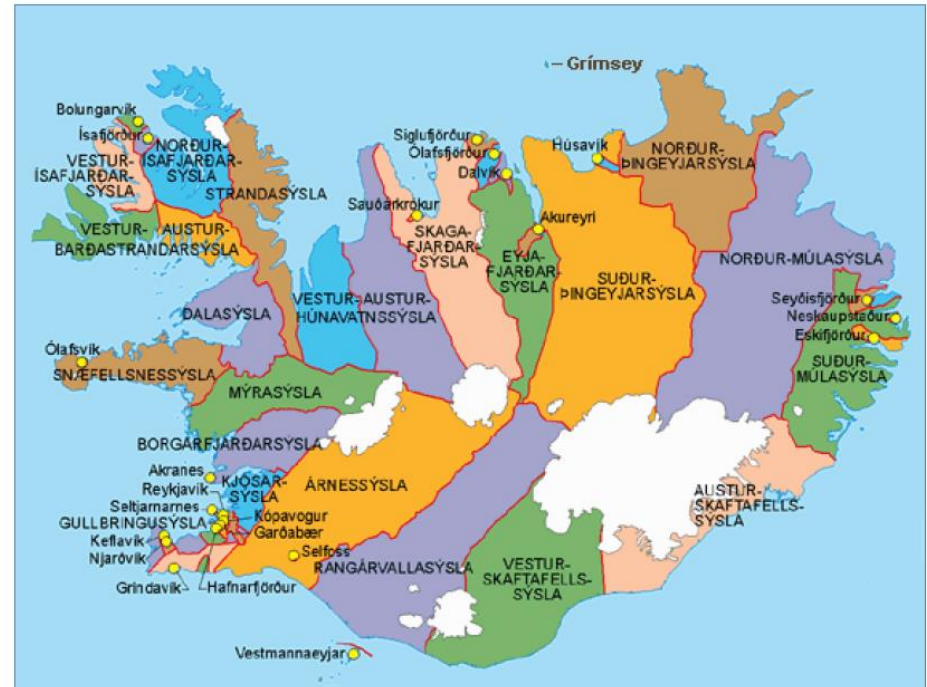
- Generalized /l/-devoicing only: We should find speakers who have generalized /l/-devoicing without devoicing /m,n/ before /p,t,k/
- No violations of the hierarchy: We should not find any speakers who have devoicing in /lt/ clusters and /m,n+/p,t,k/ clusters but not in /l+/p,t,k/-clusters

# The hypothesis tested..., 2

The areas considered:

Northern Iceland:

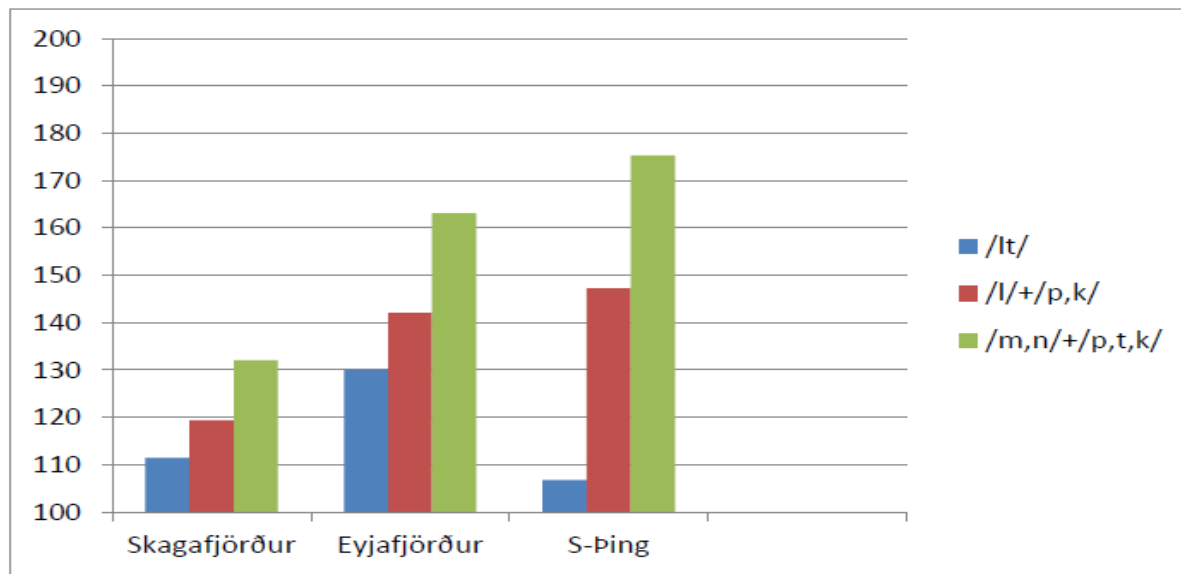
1. Skagafjörður  
(Skagafjarðarsýsla)
1. Eyjafjörður (with Akureyri)  
(Eyjafjarðarsýsla)
3. S-Ping  
(Suður-Pingeyjarsýsla)



*Fig. 4: The “sýslur” (‘counties’) of Iceland  
(and some towns)*

# The hypothesis tested..., 3

The first prediction: “The devoicing hierarchy” and the results from RÍN for the three areas (cf. Kristján Árnason 2005:375):

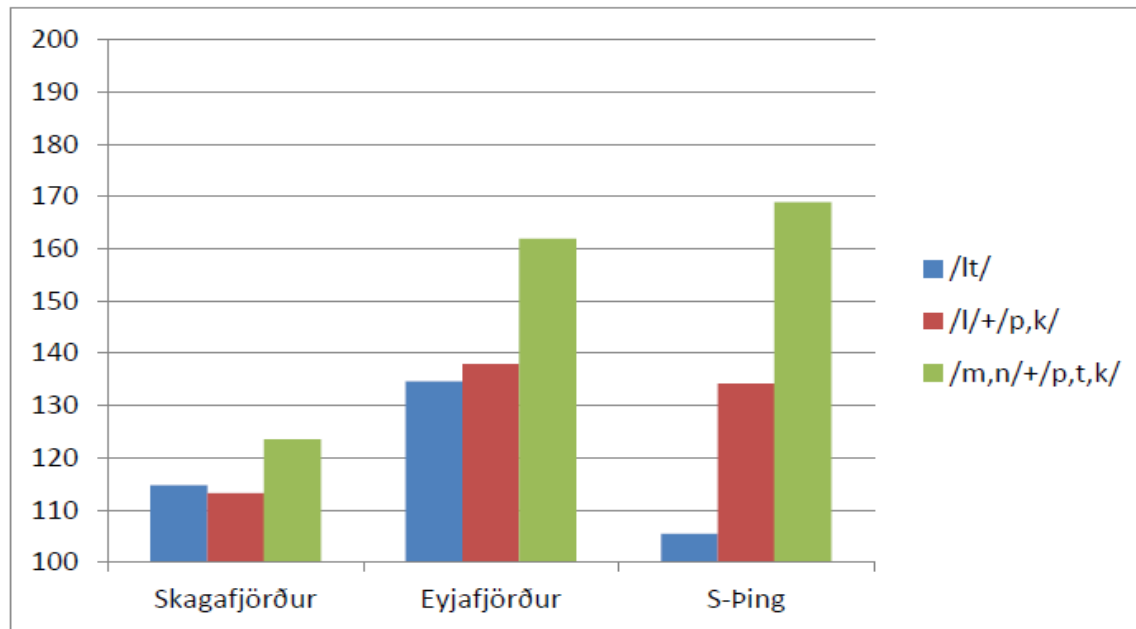


*Fig. 5: The frequency of voiced sonorants in sonorant + /p,t,k/-clusters. 200 = ‘occurred all the time in the speech samples’, 100 = ‘did not occur at all in the speech samples’ (all speakers).*



# The hypothesis tested..., 4

The first prediction: “The devoicing hierarchy” and the results from RAUN (2010+):

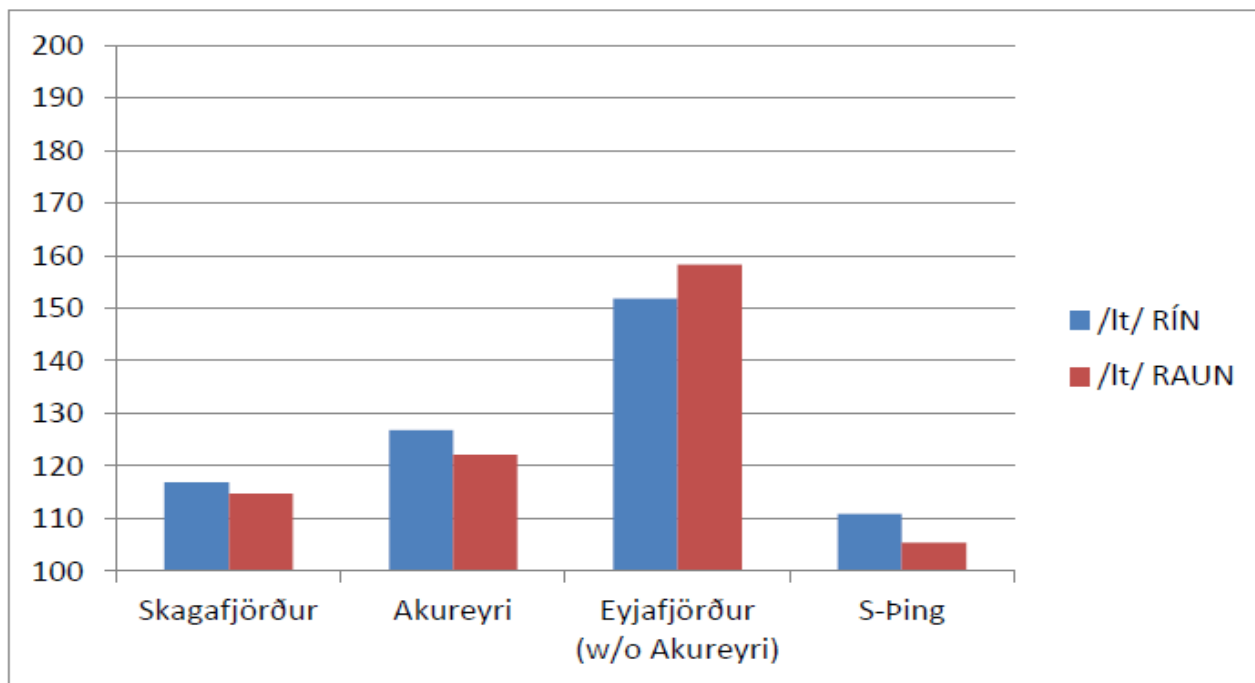


*Fig. 6: The frequency of voiced sonorants in sonorant + /p,t,k/-clusters (adult speakers only, born 1928–1970).*



# The hypothesis tested..., 5

Real-time change from RÍN (1980+) to RAUN (2010+) of voicing in /lt/-sequences in Skagafjörður (N = 17), Akureyri (N = 34), Eyjafjörður (without Akureyri, N = 18) and S-Ping (N = 28):

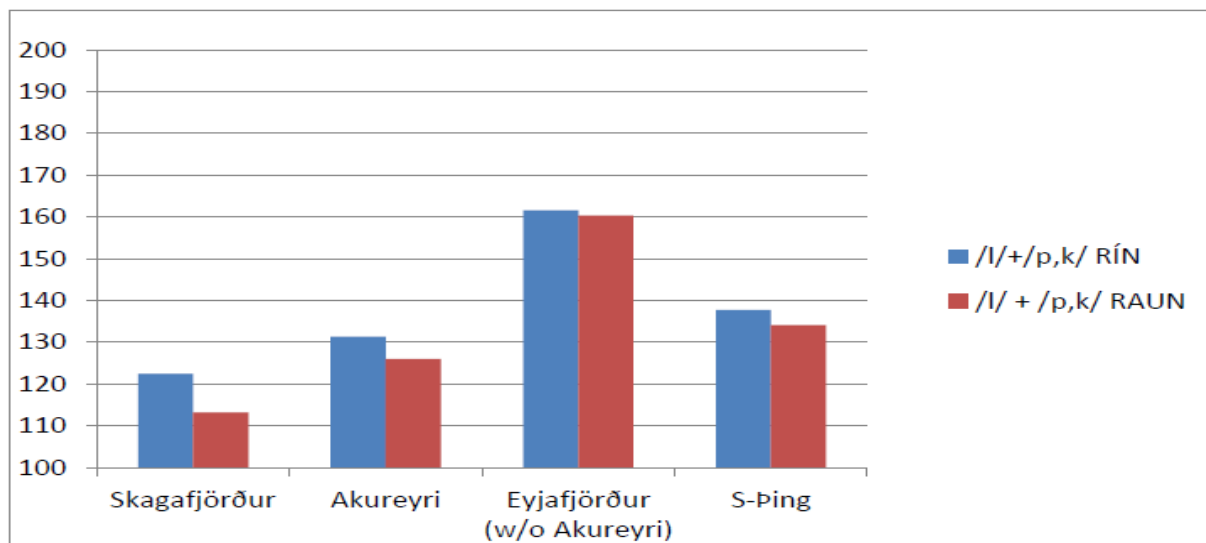


*Fig. 7: The frequency of voiced /l/ in /lt/-clusters (same speakers).*



# The hypothesis tested..., 6

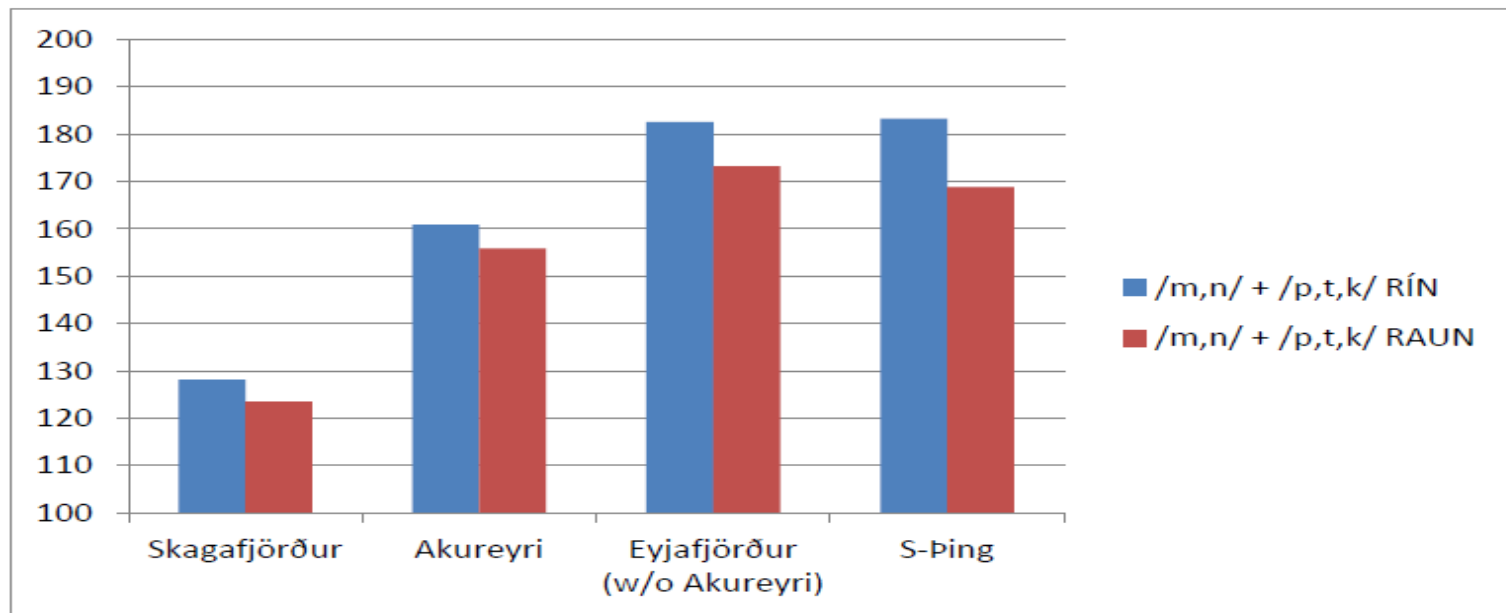
Real-time change from RÍN (1980+) to RAUN (2010+) of voicing in /l/ + /p,k/-sequences in Skagafjörður, Akureyri, Eyjafjörður (without Akureyri) and S-Þing:



*Fig. 8: The frequency of voiced /l/ in /l/ + /p,k/-clusters (same speakers).*

# The hypothesis tested..., 7

Real-time change from RÍN (1980+) to RAUN (2010+) of voicing in /m,n/ + /p,t,k/-sequences in Skagafjörður, Akureyri, Eyjafjörður (without Akureyri) and S-Þing:



*Fig. 9: The frequency of voiced /m,n/ in /m,n/ + /p,t,k/-clusters (same speakers). [There is a strong and significant correlation between age and voicing in this context in S-Þing but not elsewhere;  $r = .664$ ,  $p = .000$ . Age distribution was somewhat different in the areas. No correl. w. gender.]*

# The hypothesis tested..., 8

Second prediction: **Generalized /l/-devoicing only:**

Speaker	/lt/	/l/ + /p,k/	/m,n/ + /p,t,k/
A024RÍN	100	167	200
A024RAUN	100	160	183
A074RÍN	118	133	200
A074RAUN	100	100	192
A202RÍN	100	109	200
A202RAUN	100	100	167
SP148RÍN	183	192	200
SP148RAUN	100	150	200
SP171RÍN	100	115	200
SP171RAUN	100	120	200
SP183RÍN	100	100	197
SP183RAUN	100	100	200
SP212RÍN	100	164	200

*Table 5: Some speakers behaving as predicted by the hypothesis.*

# The hypothesis tested..., 9

Third prediction: **No violations of the hierarchy.**

Speaker	/lt/	/l/ + /p,k/	/m,n/ + /p,t,k/
A193RAUN	100	200	182
A094RAUN	200	200	183
A142RAUN	200	200	192
SP212RAUN	100	200	175

*Table 6: Potential counterexamples.*



## Concluding remarks

- We have found evidence for “change in real time”.
- This is not an instance of “learning a new dialect” under different social conditions since they have not changed markedly.
- In some instances the changes are “quantificational” (increased application of an existing rule?), in others they seem to involve generalization of a rule to new environments.
- Although there are considerable individual differences (also some lexical ones, not reported on here), the changes seem to follow a predictable path (“rule generalization”) to a considerable extent. Exceptions should be taken seriously, however, and investigated in detail.

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