A DigiHum approach to HistSocLing of Estonian

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25.07.2019

National Library of Latvia

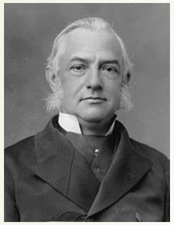
BSSD2019

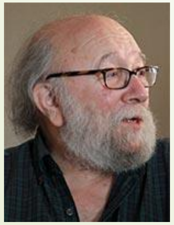
A case study in DH

- Project:
  - What mechanisms are responsible for spelling standardization at the end of 19th century Estonian?
- Data sources:
  - Anything relevant
- Timeline:
  - PhD dissertation

Some context

- Language change: intentional or not





Müller (1861), Saussure (1916), Lass (1999): „Intentional language change is peripheral to language"

Jesperson (1925), Ferguson (1989), Thomason (2007) „Intentional language change is quite central to language phenomenon"

Written grammars as part of language

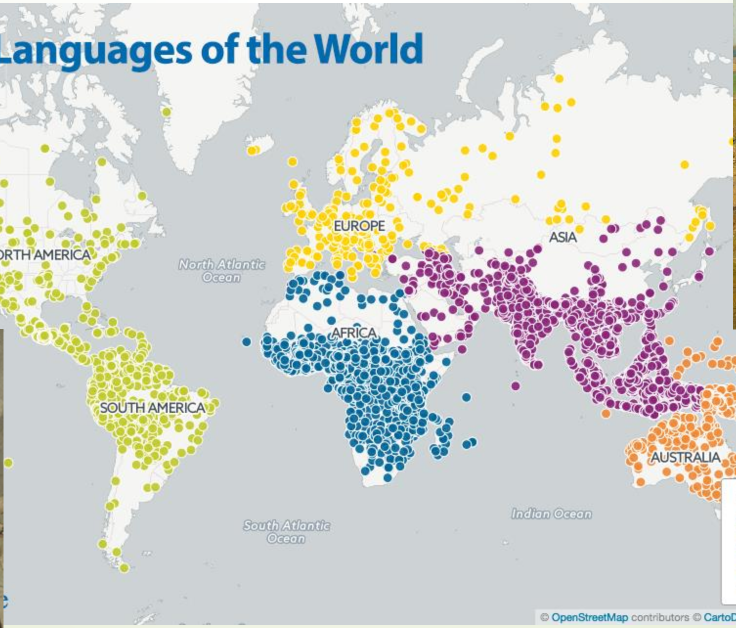
- Language institutions and written norms have become normal for us.

Eesti õigekeelsus-sõnaraamat
ÕS 2018
KIRJAKEELE NORMI ALUS
EESTI KEELE INSTITUUT
Daſchi jautajumi
par
latweeſchu walodu,
K. Mühlenbacha
iſſtrahdati.
Jelgawā.
H. J. Drawin-Drawneeka apgahdiba.
1891.
graminaceous /ˌgræmɪˈneɪʃəs/
or like grass. [Latin gramen grass]
graminivorous /ˌgræmɪˈnɪvərəs/
feeding on grass, cereals, etc.
grammar /ˈgræmə(r)/ n. 1 the stu
rules of a language's inflections or
NEW ENGLISH DICTIONARY ON HISTORICAL PRINCIPLES

Members of *Académie Française (2019)*

Languages without these grammars

- Sociolinguistic research has shown that this is not always the case
- Of ~7,000 languages, ~3,000 still are not written



Even much writing is without standards

Shakespere, Shackspeare, Shakespear, Shakspere, Shaxspere, Shaxper, Shakspeare, Shackespeare, Shackspere, Shackespere

- E.g. English became standardised from ~18c onwards

A
DICTIONARY
OF THE
ENGLISH LANGUAGE:
IN WHICH
The WORDS are deduced from their ORIGINALS,
AND
ILLUSTRATED in their DIFFERENT SIGNIFICATIONS
BY
EXAMPLES from the beſt WRITERS.
TO WHICH ARE PREFIXED,
A HISTORY of the LANGUAGE,
AND
AN ENGLISH GRAMMAR.
By SAMUEL JOHNSON, A.M.
In TWO VOLUMES.
VOL. I.
THE SECOND EDITION.

[illegible] Hor.

LONDON,
Printed by W. STRAHAN,
For J. and P. KNAPTON; T. and T. LONGMAN; C. HITCH and L. HAWES;
A. MILLAR; and R. and J. DODSLEY.
MDCCLV.

Samuel Johnson (1750): *Dictionary of English Language*

- *Shakespeare* standardized from 1860 onwards only

Standardization research

- Spelling practices vary by community.
- Mechanisms and developments may depend on particular circumstances.

- How did this take place for (some of) Estonian?

Estonian in the late 19c

- From 1800-1900:
  - Peasant population becomes independent
  - Quick developments in education
    - Literacy from 20% to 95%
  - Intense travel and movement
    - Urbanization, railroads
  - Social and cultural modernization
    - Cultural production and identity
    - Strive to become a nation

Language standardization

- One form instead of many (colour & color -> color)
- How can this happen?
  - Talk like your neighbour
  - Follow a book
  - Survive longer
- For mechanisms, we should follow the process

Finding the data

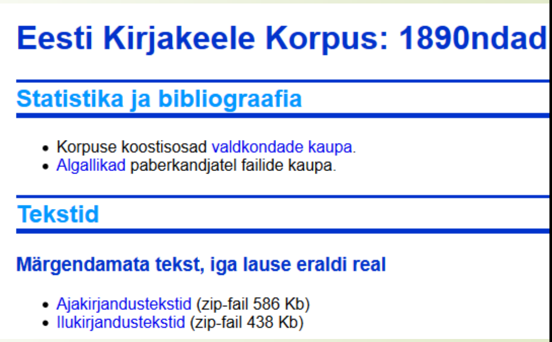
What is needed? What is available?

Texts

- To study writing, we need texts:
  - Ideally from a variety of people
    - Education, dialect, profession
- Sources:
  - Linguistic corpora
  - Digitized works

Linguistic corpora

- Linguistic corpora are balanced collections of texts to facilitate language research.
- For the period, there’s two:
  - Written Estonian Corpus
    - some 300 book snippets in 1890-1930
  - Old Written Estonian Corpus
    - all texts 1500-1700, some 50 texts from later
- Small-ish and not much metadata



Eesti Kirjakeele Korpus: 1890ndad

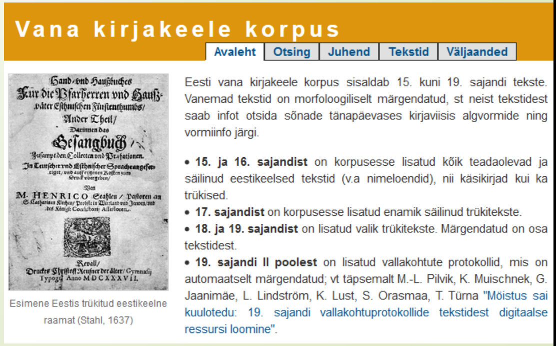
Statistika ja bibliograafia

- Korpuse koostisosad valdkondade kaupa.
- Algallikad paberkandjatel failide kaupa.

Tekstid

Märgendamata tekst, iga lause eraldi real

- Ajakirjandustekstid (zip-fail 586 Kb)
- Ilukirjandustekstid (zip-fail 438 Kb)



Vana kirjakeele korpus

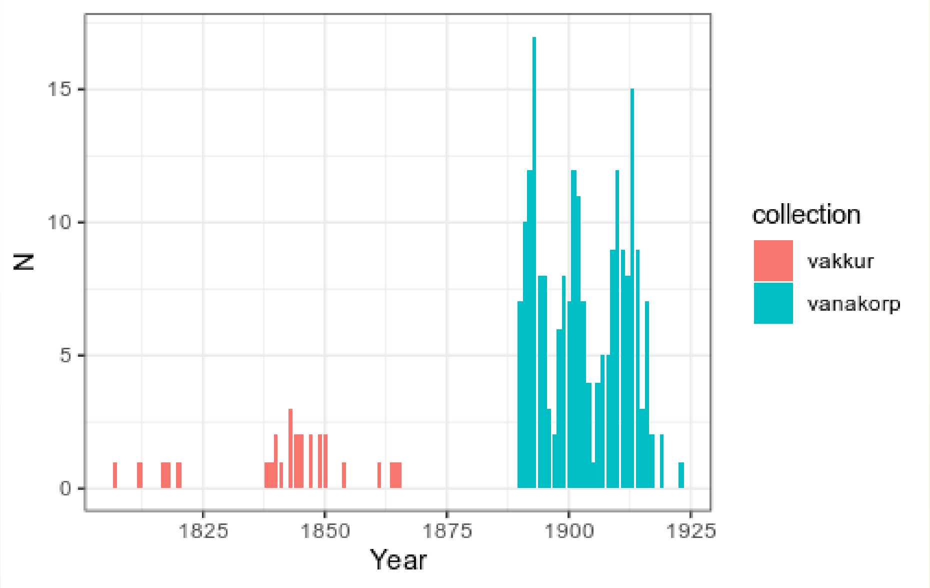
Esimene Eestis trükitud eestikeelne raamat (Stahl, 1637)

Eesti vana kirjakeele korpus sisaldab 15. kuni 19. sajandi tekste. Vanemad tekstid on morfoloogiliselt märgendatud, st neist tekstidest saab infot otsida sõnade tänapäevases kirjaviisis algvormide ning vormiinfo järgi.

- **15. ja 16. sajandist** on korpusesse lisatud kõik teadaolevad ja säilinud eestikeelsed tekstid (v.a nimeloendid), nii käsikirjad kui ka trükised.
- **17. sajandist** on korpusesse lisatud enamik säilinud trükitekste.
- **18. ja 19. sajandist** on lisatud valik trükitekste. Märgendatud on osa tekstidest.
- **19. sajandi II poolest** on lisatud vallakohtute protokollid, mis on automaatselt märgendatud; vt täpsemalt M.-L. Pilvik, K. Muischnek, G. Jaanimäe, L. Lindström, K. Lust, S. Orasmaa, T. Türna "Mõistus sai kuulotedu: 19. sajandi vallakohtuprotokollide tekstidest digitaalse ressursi loomine".

Linguistic corpora

- Texts have high quality (though spelling was not in focus)
- Relatively small though.



Digitized texts

- For the past 20-30 years, a huge number of texts have been digitized.
  - In various collections and formats
  - With varying editing practices

Eesti Kirjandusmuuseum
Estonian Literary Museum
Kreutzwaldi sajand
EESTI KULTUURILOOLINE VEEB

DIGAR
DIGITAALARHIIV

DSpace

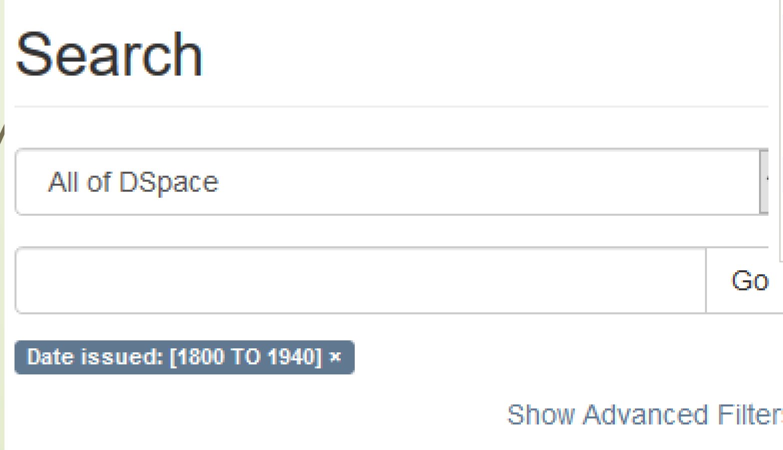
ETERA

KULTUURIMINISTEERIUM

Wikisource

Examples of text collections

- A variety of interfaces and access points
  - Usually text mining is not an option they consider
  - But don't mind either



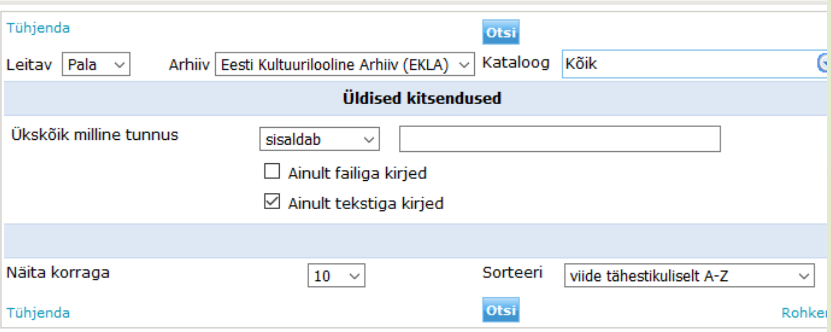
Search

All of DSpace

Go

Date issued: [1800 TO 1940] ×

Show Advanced Filters



Tühjenda Otsi

Leitav: Pala | Arhiiv: Eesti Kultuurilooline Arhiiv (EKLA) | Kataloog: Kõik

Üldised kitsendused

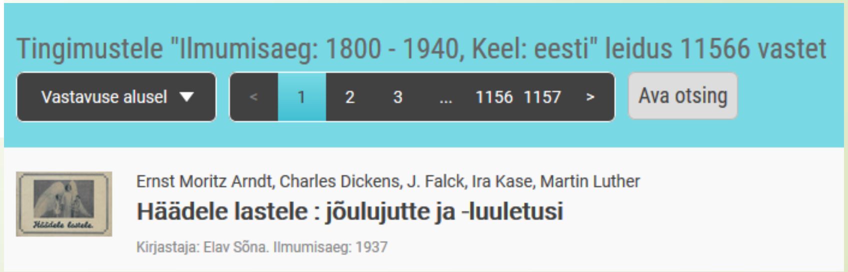
Ükskõik milline tunnus: sisaldab

□ Ainult failiga kirjed

☑ Ainult tekstiga kirjed

Näita korraga: 10 | Sorteeri: viide tähestikuliselt A-Z

Tühjenda Otsi Rohke



Tingimustele "Ilmumisaeg: 1800 - 1940, Keel: eesti" leidus 11566 vastet

Vastavuse alusel ▼ | < 1 2 3 ... 1156 1157 > | Ava otsing

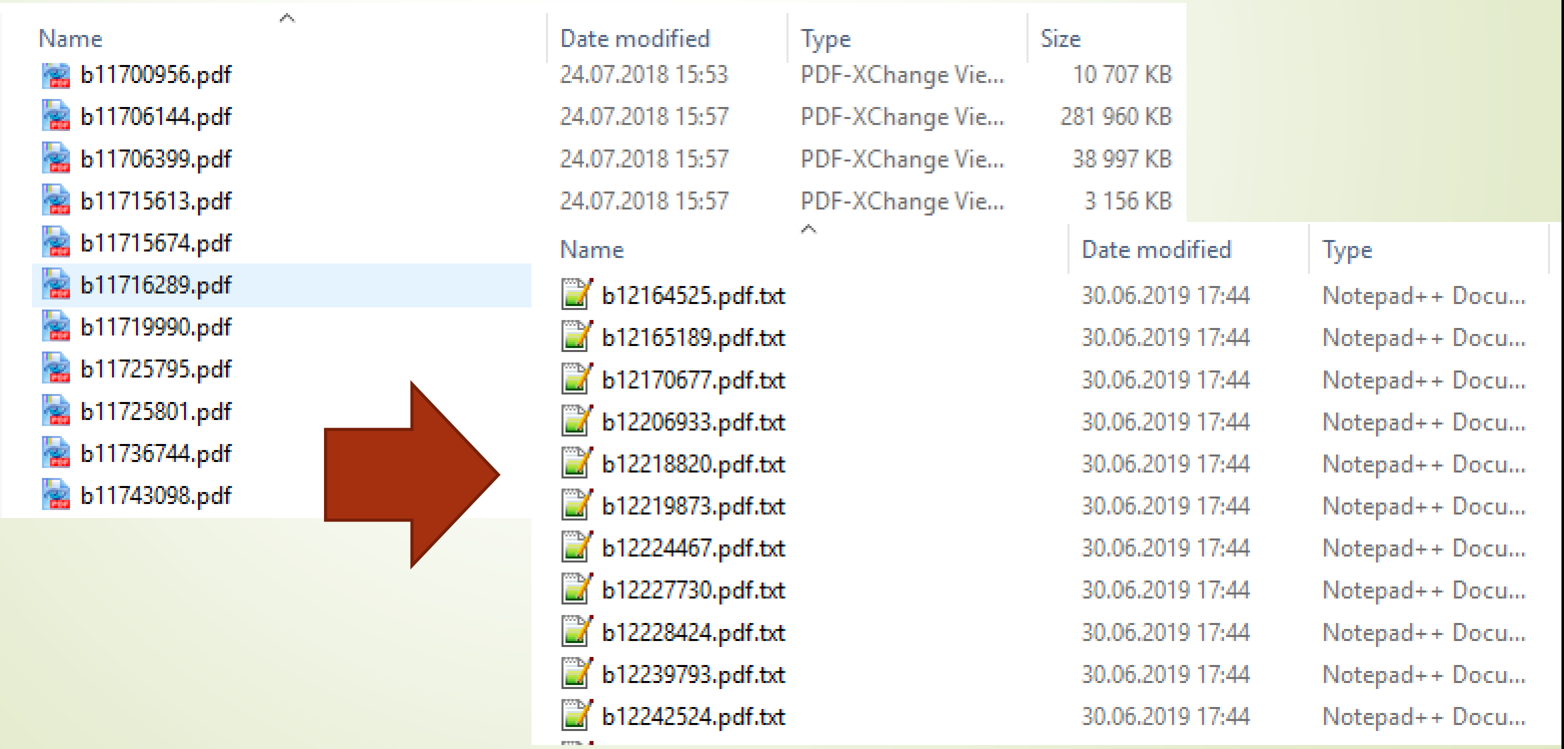
Ernst Moritz Arndt, Charles Dickens, J. Falck, Ira Kase, Martin Luther

Häädele lastele : jõulujutte ja -luuletusi

Kirjastaja: Elav Sõna. Ilmumisaeg: 1937

Getting the text

- Files of different format into text

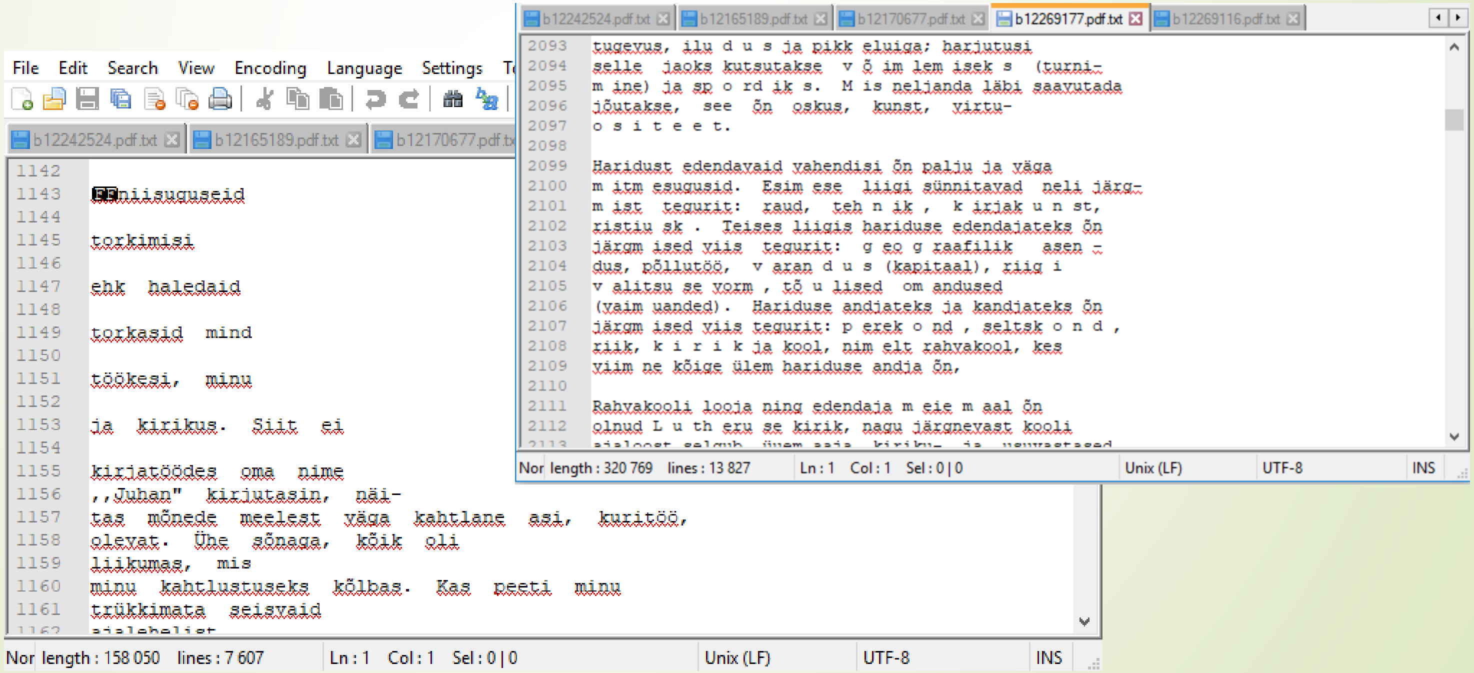


Name	Date modified	Type	Size
b11700956.pdf	24.07.2018 15:53	PDF-XChange Vie...	10 707 KB
b11706144.pdf	24.07.2018 15:57	PDF-XChange Vie...	281 960 KB
b11706399.pdf	24.07.2018 15:57	PDF-XChange Vie...	38 997 KB
b11715613.pdf	24.07.2018 15:57	PDF-XChange Vie...	3 156 KB
b11715674.pdf			
b11716289.pdf			
b11719990.pdf			
b11725795.pdf			
b11725801.pdf			
b11736744.pdf			
b11743098.pdf			

Name	Date modified	Type
b12164525.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12165189.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12170677.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12206933.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12218820.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12219873.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12224467.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12227730.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12228424.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12239793.pdf.txt	30.06.2019 17:44	Notepad++ Docu...
b12242524.pdf.txt	30.06.2019 17:44	Notepad++ Docu...

Getting the text

- Finally, will have files that contain raw text
  - Quality will vary



```
FFniisuguseid

torkimisi

ehk  haledaid

torkasid  mind

töökesi,  minu

ja  kirikus.  Siit  ei

kirjatöödes  oma  nime
,,Juhan"  kirjutasin,  näi-
tas  mõnede  meelest  väga  kahtlane  asi,  kuritöö,
olevat.  Ühe  sõnaga,  kõik  oli
liikumas,  mis
minu  kahtlustuseks  kõlbas.  Kas  peeti  minu
trükkimata  seisvaid
```

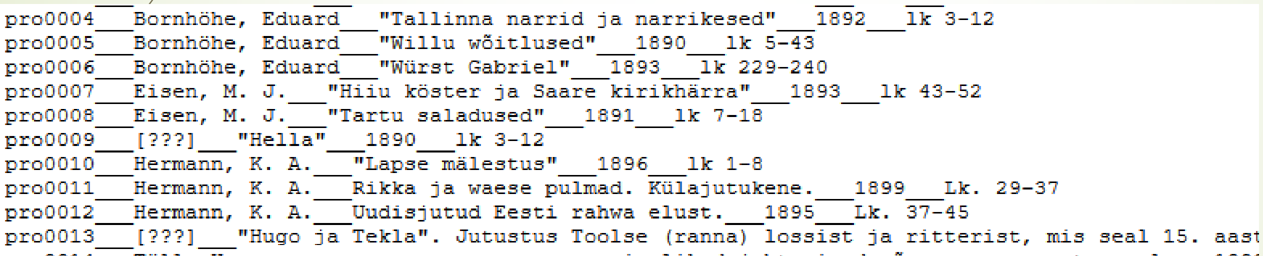
```
tugevus, ilu d u s ja pikk eluiga; harjutusi
selle  jaoks kutsutakse  v õ im lem isek s  (turni-
m ine) ja sp o rd ik s.  M is neljanda läbi saavutada
jõutakse,  see  õn  oskus,  kunst,  virtu-
o s i t e e t.

Haridust edendavaid vahendisi õn palju ja väga
m itm esugusid.  Esim ese  liigi sünnitavad  neli järg-
m ist  tegurit:  raud,  teh n ik ,  k irjak u n st,
ristiu sk .  Teises liigis hariduse edendajateks õn
järgm ised viis  tegurit:  g eo g raafilik   asen -
dus, põllutöö,  v aran d u s (kapitaal), riig i
v alitsu se vorm , tõ u lised  om andused
(vaim uanded).  Hariduse andjateks ja kandjateks õn
järgm ised viis tegurit: p erek o nd , seltsk o n d ,
riik, k i r i k ja kool, nim elt rahvakool, kes
viim ne kõige ülem hariduse andja õn,

Rahvakooli looja ning edendaja m eie m aal õn
olnud L u th eru se kirik, nagu järgnevast kooli
```

Metadata

- Again in various formats
- Ought to be collected



```
pro0004___Bornhöhe, Eduard___"Tallinna narrid ja narrikesed"___1892___lk 3-12
pro0005___Bornhöhe, Eduard___"Willu wõitlused"___1890___lk 5-43
pro0006___Bornhöhe, Eduard___"Würst Gabriel"___1893___lk 229-240
pro0007___Eisen, M. J.___"Hiiu köster ja Saare kirikhärra"___1893___lk 43-52
pro0008___Eisen, M. J.___"Tartu saladused"___1891___lk 7-18
pro0009___[???]___"Hella"___1890___lk 3-12
pro0010___Hermann, K. A.___"Lapse mälestus"___1896___lk 1-8
pro0011___Hermann, K. A.___Rikka ja waese pulmad. Külajutukene.___1899___Lk. 29-37
pro0012___Hermann, K. A.___Uudisjutud Eesti rahwa elust.___1895___Lk. 37-45
pro0013___[???]___"Hugo ja Tekla". Jutustus Toolse (ranna) lossist ja ritterist, mis seal 15. aast
pro0014___Tüll, He                              ema imelikud juhtumised wõera mere-saarte peal.___1891
pro0015___Jaanus,                               olm juttu noorerahwa elust."___1893___lk 3-11
pro0016___Jakobson                              399___lk 34-39
pro0017___Järw, J.                              tustus Eesti minewikust."___1892___Lk. 127-136
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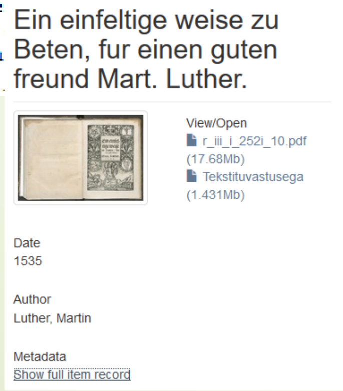


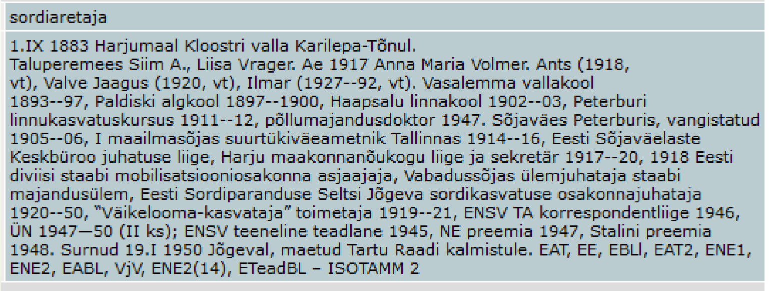
Ein einfeltige weise zu Beten, fur einen guten freund Mart. Luther.

View/Open
r_iii_i_252i_10.pdf
(17.68Mb)
Tekstituvastusega
(1.431Mb)

Date
1535

Author
Luther, Martin

Metadata
Show full item record

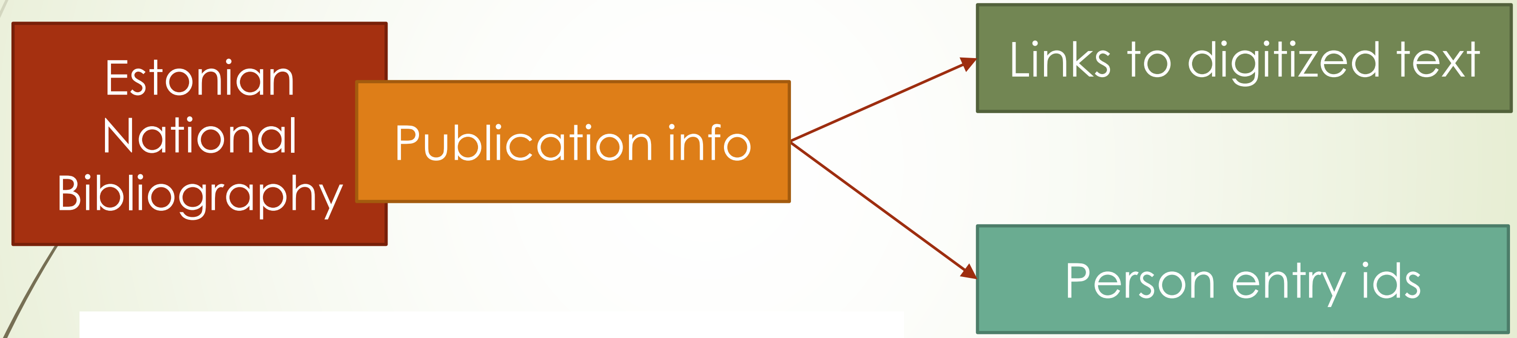


sordiaretaja

1.IX 1883 Harjumaal Kloostri valla Karilepa-Tõnul.
Taluperemees Siim A., Liisa Vrager. Ae 1917 Anna Maria Volmer. Ants (1918, vt), Valve Jaagus (1920, vt), Ilmar (1927--92, vt). Vasalemma vallakool 1893--97, Paldiski algkool 1897--1900, Haapsalu linnakool 1902--03, Peterburi linnukasvatuskursus 1911--12, põllumajandusdoktor 1947. Sõjaväes Peterburis, vangistatud 1905--06, I maailmasõjas suurtükiväeametnik Tallinnas 1914--16, Eesti Sõjaväelaste Keskbüroo juhatuse liige, Harju maakonnanõukogu liige ja sekretär 1917--20, 1918 Eesti diviisi staabi mobilisatsiooniosakonna asjaajaja, Vabadussõjas ülemjuhataja staabi majandusülem, Eesti Sordiparanduse Seltsi Jõgeva sordikasvatuse osakonnajuhataja 1920--50, "Väikelooma-kasvataja" toimetaja 1919--21, ENSV TA korrespondentliige 1946, ÜN 1947—50 (II ks); ENSV teeneline teadlane 1945, NE preemia 1947, Stalini preemia 1948. Surnud 19.I 1950 Jõgeval, maetud Tartu Raadi kalmistule. EAT, EE, EBLl, EAT2, ENE1, ENE2, EABL, VjV, ENE2(14), ETeadBL – ISOTAMM 2

Metadata

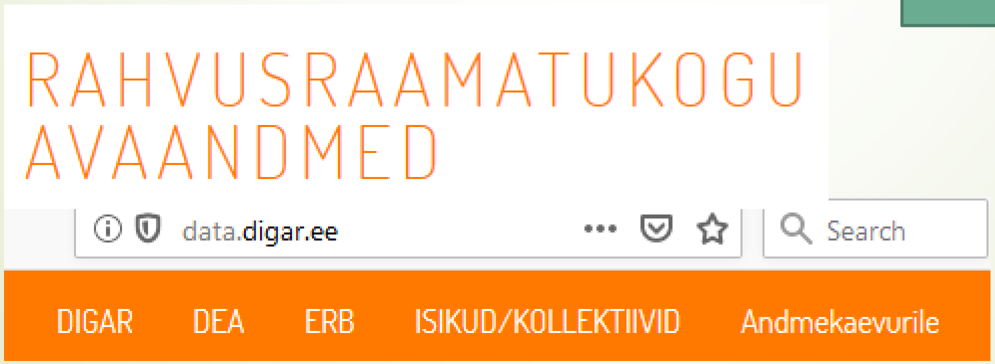
- General indexes (e.g. Estonian National Bibliography)


Estonian National Bibliography

Publication info

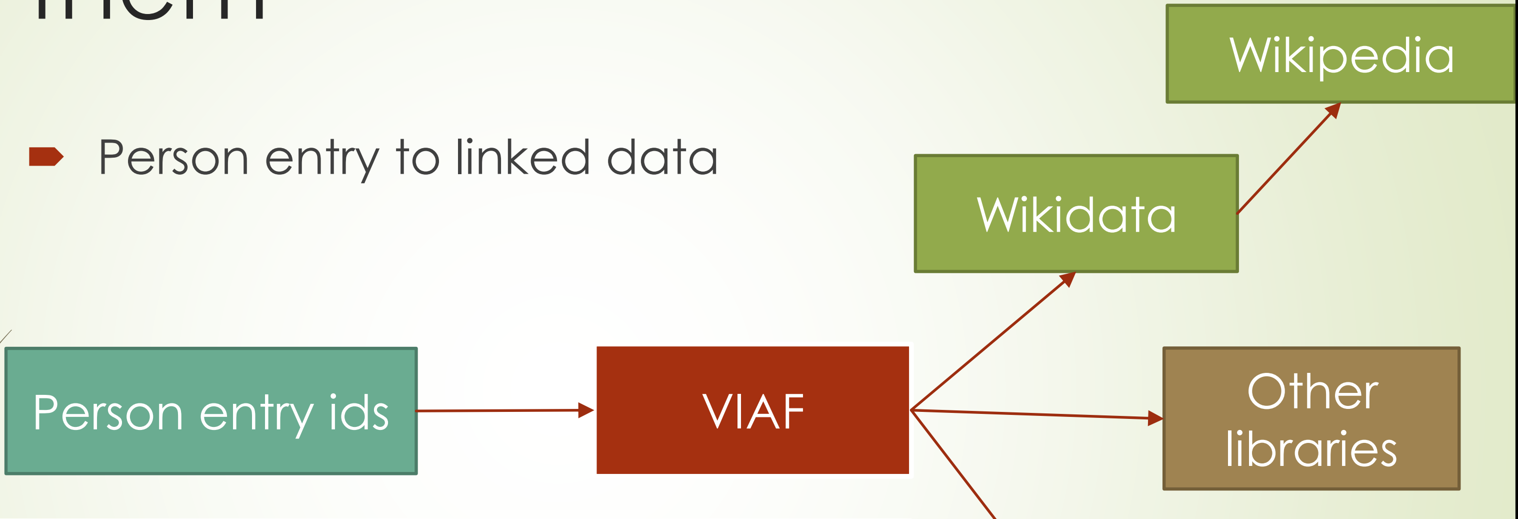
Links to digitized text

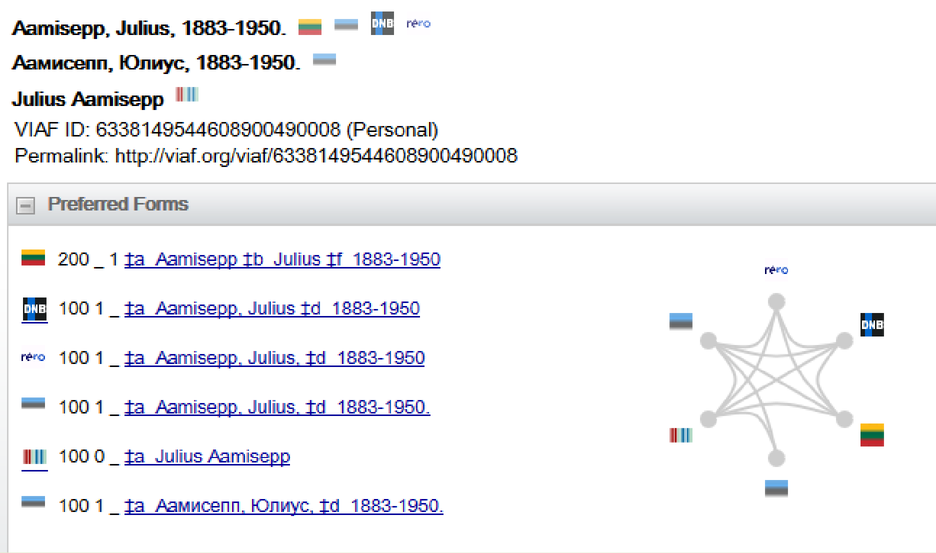
Person entry ids


RAHVUSRAAMATUKOGU AVAANDMED

Collecting them all, linking them

- Person entry to linked data




Aamisepp, Julius, 1883-1950.

Аамисепп, Юлиус, 1883-1950.

Julius Aamisepp

VIAF ID: 63381495446089004900008 (Personal)

Permalink: http://viaf.org/viaf/63381495446089004900008

200 _ 1 ‡a Aamisepp ‡b Julius ‡f 1883-1950

100 1 _ ‡a Aamisepp, Julius ‡d 1883-1950

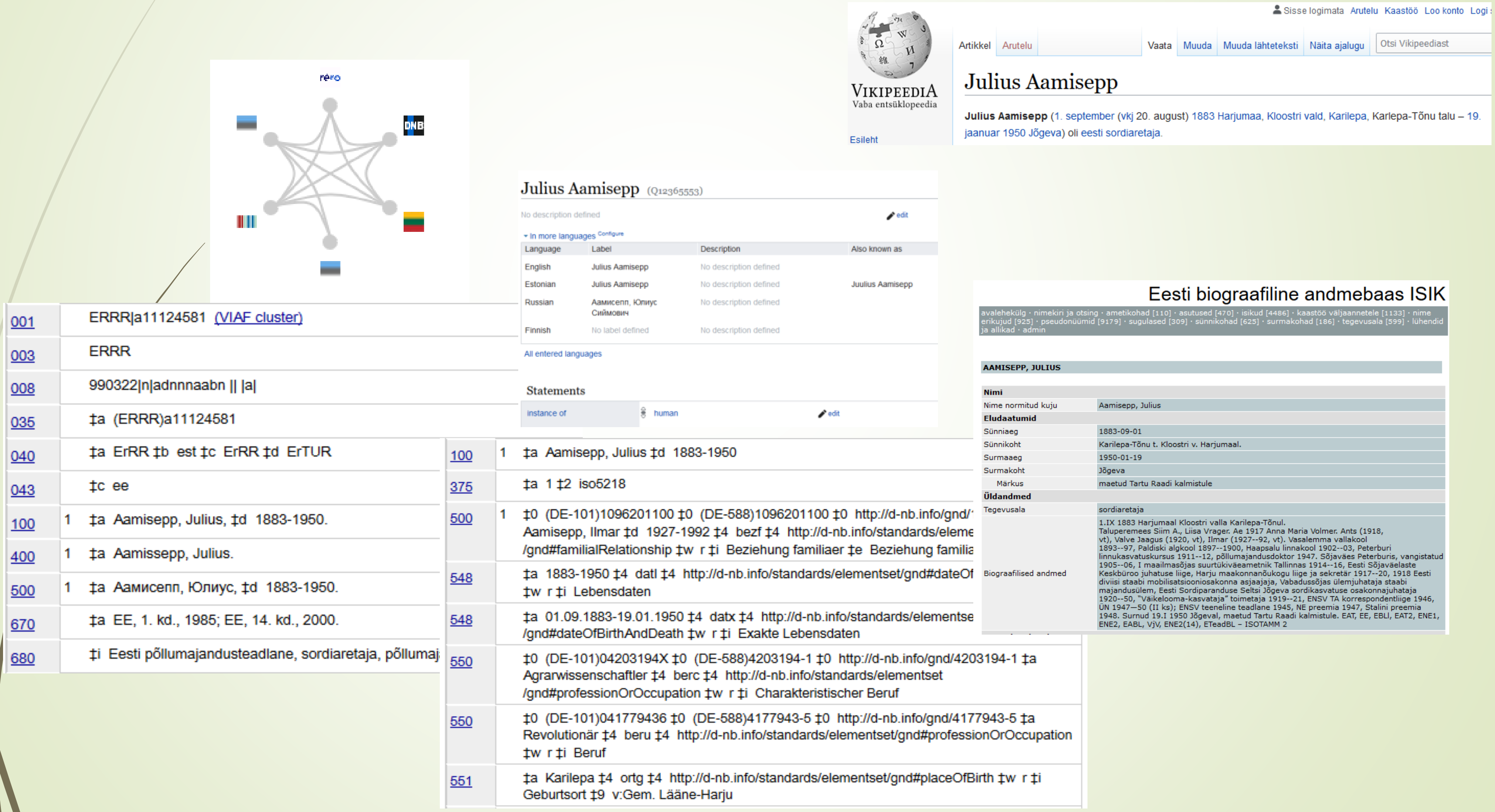
100 1 _ ‡a Aamisepp, Julius, ‡d 1883-1950

100 1 _ ‡a Aamisepp, Julius, ‡d 1883-1950.

100 0 _ ‡a Julius Aamisepp

100 1 _ ‡a Аамисепп, Юлиус, ‡d 1883-1950.

Aggregating the data



001		ERRR|a11124581 (VIAF cluster)
003		ERRR
008		990322|n|adnnnaabn || |a|
035		‡a (ERRR)a11124581
040		‡a ErRR ‡b est ‡c ErRR ‡d ErTUR
043		‡c ee
100	1	‡a Aamisepp, Julius, ‡d 1883-1950.
400	1	‡a Aamissepp, Julius.
500	1	‡a Аамисепп, Юлиус, ‡d 1883-1950.
670		‡a EE, 1. kd., 1985; EE, 14. kd., 2000.
680		‡i Eesti põllumajandusteadlane, sordiaretaja, põllumaj

100	1	‡a Aamisepp, Julius ‡d 1883-1950
375		‡a 1 ‡2 iso5218
500	1	‡0 (DE-101)1096201100 ‡0 (DE-588)1096201100 ‡0 http://d-nb.info/gnd/ Aamisepp, Ilmar ‡d 1927-1992 ‡4 bezf ‡4 http://d-nb.info/standards/eleme /gnd#familialRelationship ‡w r ‡i Beziehung familiaer ‡e Beziehung familia
548		‡a 1883-1950 ‡4 datl ‡4 http://d-nb.info/standards/elementset/gnd#dateOf ‡w r ‡i Lebensdaten
548		‡a 01.09.1883-19.01.1950 ‡4 datx ‡4 http://d-nb.info/standards/elementse /gnd#dateOfBirthAndDeath ‡w r ‡i Exakte Lebensdaten
550		‡0 (DE-101)04203194X ‡0 (DE-588)4203194-1 ‡0 http://d-nb.info/gnd/4203194-1 ‡a Agrarwissenschaftler ‡4 berc ‡4 http://d-nb.info/standards/elementset /gnd#professionOrOccupation ‡w r ‡i Charakteristischer Beruf
550		‡0 (DE-101)041779436 ‡0 (DE-588)4177943-5 ‡0 http://d-nb.info/gnd/4177943-5 ‡a Revolutionär ‡4 beru ‡4 http://d-nb.info/standards/elementset/gnd#professionOrOccupation ‡w r ‡i Beruf
551		‡a Karilepa ‡4 ortg ‡4 http://d-nb.info/standards/elementset/gnd#placeOfBirth ‡w r ‡i Geburtsort ‡9 v:Gem. Lääne-Harju

Julius Aamisepp (Q12365553)

No description defined ✎ edit

▾ In more languages Configure

Language	Label	Description	Also known as
English	Julius Aamisepp	No description defined	
Estonian	Julius Aamisepp	No description defined	Juulius Aamisepp
Russian	Аамисепп, Юлиус Сиймович	No description defined	
Finnish	No label defined	No description defined	

All entered languages

Statements

instance of	human	✎ edit

Julius Aamisepp

Julius Aamisepp (1. september (vkj 20. august) 1883 Harjumaa, Kloostri vald, Karilepa, Karlepa-Tõnu talu – 19. jaanuar 1950 Jõgeva) oli eesti sordiaretaja.

Eesti biograafiline andmebaas ISIK

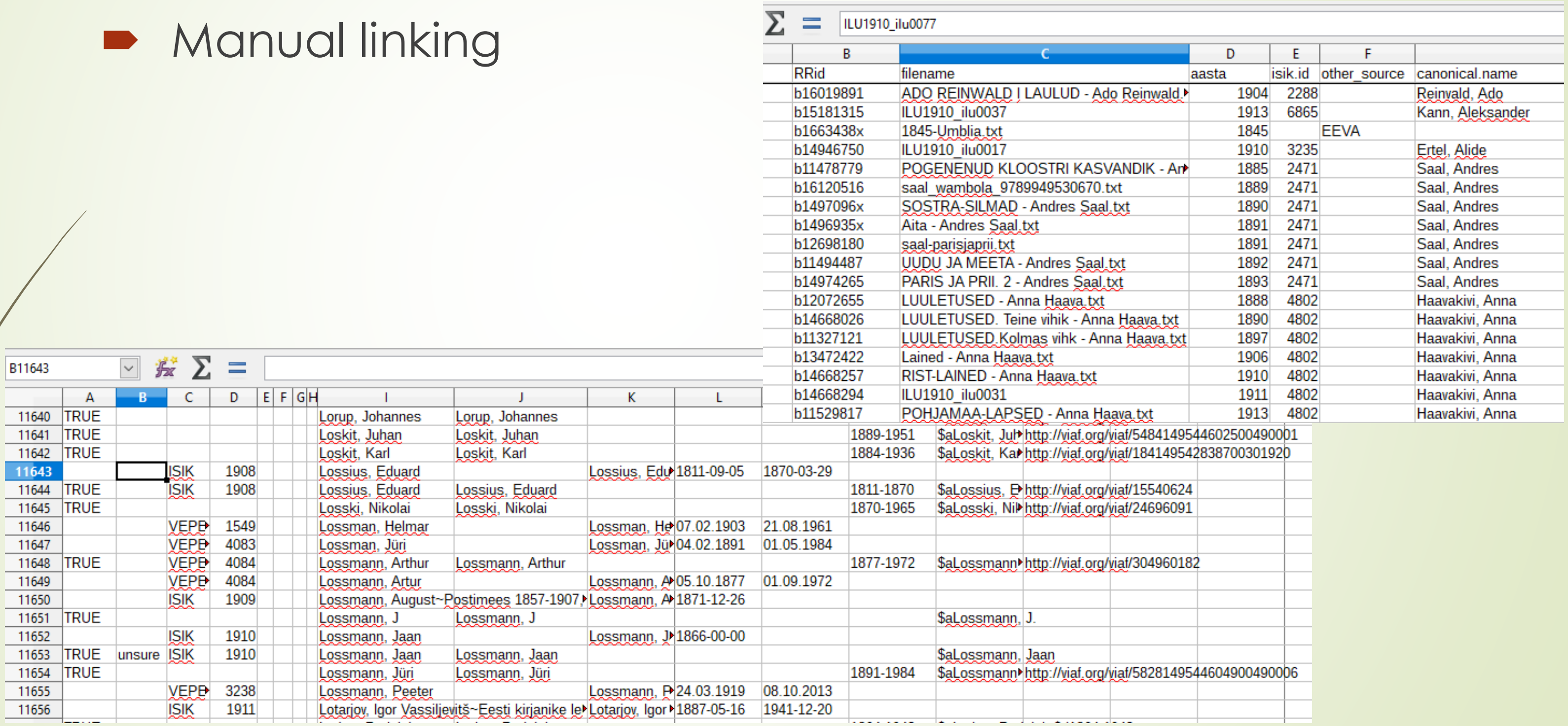
avalehekülg · nimekiri ja otsing · ametikohad [110] · asutused [470] · isikud [4486] · kaastöö väljaannetele [1133] · nime erikujud [925] · pseudonüümid [9179] · sugulased [309] · sünnikohad [625] · surmakohad [186] · tegevusala [599] · lühendid ja allikad · admin

AAMISEPP, JULIUS

Nimi	
Nime normitud kuju	Aamisepp, Julius
Eludaatumid	
Sünniaeg	1883-09-01
Sünnikoht	Karilepa-Tõnu t. Kloostri v. Harjumaal.
Surmaaeg	1950-01-19
Surmakoht	Jõgeva
Märkus	maetud Tartu Raadi kalmistule
Üldandmed	
Tegevusala	sordiaretaja
Biograafilised andmed	1.IX 1883 Harjumaal Kloostri valla Karilepa-Tõnul. Taluperemees Siim A., Liisa Vrager. Ae 1917 Anna Maria Volmer. Ants (1918, vt), Valve Jaagus (1920, vt), Ilmar (1927--92, vt). Vasalemma vallakool 1893--97, Paldiski algkool 1897--1900, Haapsalu linnakool 1902--03, Peterburi linnukasvatuskursus 1911--12, põllumajandusdoktor 1947. Sõjaväes Peterburis, vangistatud 1905--06, I maailmasõjas suurtükiväeametnik Tallinnas 1914--16, Eesti Sõjaväelaste Keskbüroo juhatuse liige, Harju maakonnanõukogu liige ja sekretär 1917--20, 1918 Eesti diviisi staabi mobilisatsiooniosakonna asjaajaja, Vabadussõjas ülemjuhataja staabi majandusülem, Eesti Sordiparanduse Seltsi Jõgeva sordikasvatuse osakonnajuhataja 1920--50, "Väikelooma-kasvataja" toimetaja 1919--21, ENSV TA korrespondentliige 1946, ÜN 1947—50 (II ks); ENSV teeneline teadlane 1945, NE preemia 1947, Stalini preemia 1948. Surnud 19.I 1950 Jõgeval, maetud Tartu Raadi kalmistule. EAT, EE, EBLl, EAT2, ENE1, ENE2, EABL, VjV, ENE2(14), ETeadBL – ISOTAMM 2

Manual linking

- Manual linking



ILU1910_ilu0077

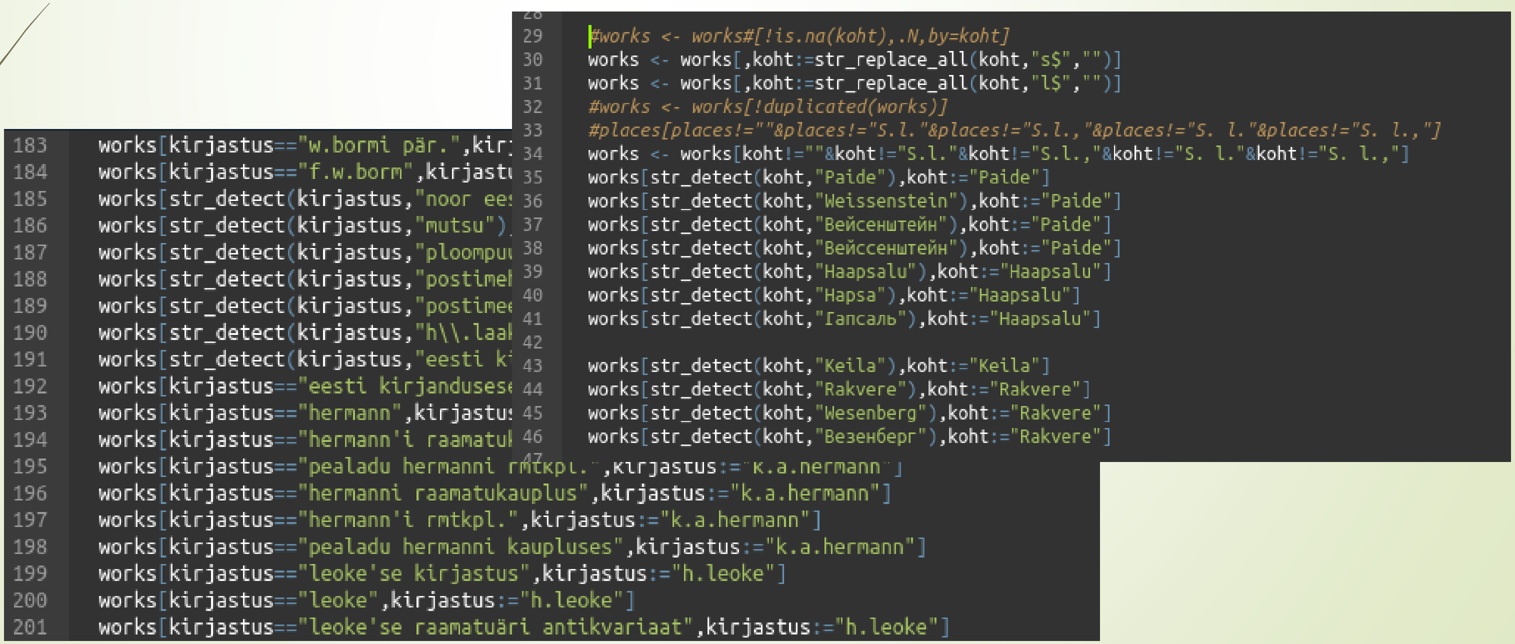
B	C	D	E	F	
RRid	filename	aasta	isik.id	other_source	canonical.name
b16019891	ADO REINWALD I LAULUD - Ado Reinwald.	1904	2288		Reinvald, Ado
b15181315	ILU1910_ilu0037	1913	6865		Kann, Aleksander
b1663438x	1845-Umblia.txt	1845		EEVA	
b14946750	ILU1910_ilu0017	1910	3235		Ertel, Alide
b11478779	POGENENUD KLOOSTRI KASVANDIK - An	1885	2471		Saal, Andres
b16120516	saal_wambola_9789949530670.txt	1889	2471		Saal, Andres
b1497096x	SOSTRA-SILMAD - Andres Saal.txt	1890	2471		Saal, Andres
b1496935x	Aita - Andres Saal.txt	1891	2471		Saal, Andres
b12698180	saal-parisjaprii.txt	1891	2471		Saal, Andres
b11494487	UUDU JA MEETA - Andres Saal.txt	1892	2471		Saal, Andres
b14974265	PARIS JA PRII. 2 - Andres Saal.txt	1893	2471		Saal, Andres
b12072655	LUULETUSED - Anna Haava.txt	1888	4802		Haavakivi, Anna
b14668026	LUULETUSED. Teine vihik - Anna Haava.txt	1890	4802		Haavakivi, Anna
b11327121	LUULETUSED.Kolmas vihk - Anna Haava.txt	1897	4802		Haavakivi, Anna
b13472422	Lained - Anna Haava.txt	1906	4802		Haavakivi, Anna
b14668257	RIST-LAINED - Anna Haava.txt	1910	4802		Haavakivi, Anna
b14668294	ILU1910_ilu0031	1911	4802		Haavakivi, Anna
b11529817	POHJAMAA-LAPSED - Anna Haava.txt	1913	4802		Haavakivi, Anna

B11643

	A	B	C	D	E	F	G	H	I	J	K	L				
11640	TRUE								Lorup, Johannes	Lorup, Johannes						
11641	TRUE								Loskit, Juhan	Loskit, Juhan				1889-1951	$aLoskit, Jul	http://viaf.org/viaf/54841495446025004900001
11642	TRUE								Loskit, Karl	Loskit, Karl				1884-1936	$aLoskit, Ka	http://viaf.org/viaf/184149542838700301920
11643			ISIK	1908					Lossius, Eduard		Lossius, Edu	1811-09-05	1870-03-29			
11644	TRUE		ISIK	1908					Lossius, Eduard	Lossius, Eduard				1811-1870	$aLossius, E	http://viaf.org/viaf/15540624
11645	TRUE								Losski, Nikolai	Losski, Nikolai				1870-1965	$aLosski, Ni	http://viaf.org/viaf/24696091
11646			VEPE	1549					Lossman, Helmar		Lossman, He	07.02.1903	21.08.1961			
11647			VEPE	4083					Lossman, Jüri		Lossman, Jü	04.02.1891	01.05.1984			
11648	TRUE		VEPE	4084					Lossmann, Arthur	Lossmann, Arthur				1877-1972	$aLossmann	http://viaf.org/viaf/304960182
11649			VEPE	4084					Lossmann, Artur		Lossmann, A	05.10.1877	01.09.1972			
11650			ISIK	1909					Lossmann, August~Postimees 1857-1907,		Lossmann, A	1871-12-26				
11651	TRUE								Lossmann, J	Lossmann, J					$aLossmann, J.	
11652			ISIK	1910					Lossmann, Jaan		Lossmann, J	1866-00-00				
11653	TRUE	unsure	ISIK	1910					Lossmann, Jaan	Lossmann, Jaan					$aLossmann, Jaan	
11654	TRUE								Lossmann, Jüri	Lossmann, Jüri				1891-1984	$aLossmann	http://viaf.org/viaf/58281495446049004900006
11655			VEPE	3238					Lossmann, Peeter		Lossmann, P	24.03.1919	08.10.2013			
11656			ISIK	1911					Lotarjov, Igor Vassiljevitš~Eesti kirjanike le		Lotarjov, Igor	1887-05-16	1941-12-20			

Harmonization

- For archival puproses, accuracy is key.
- For analysis, data harmonization is often needed.



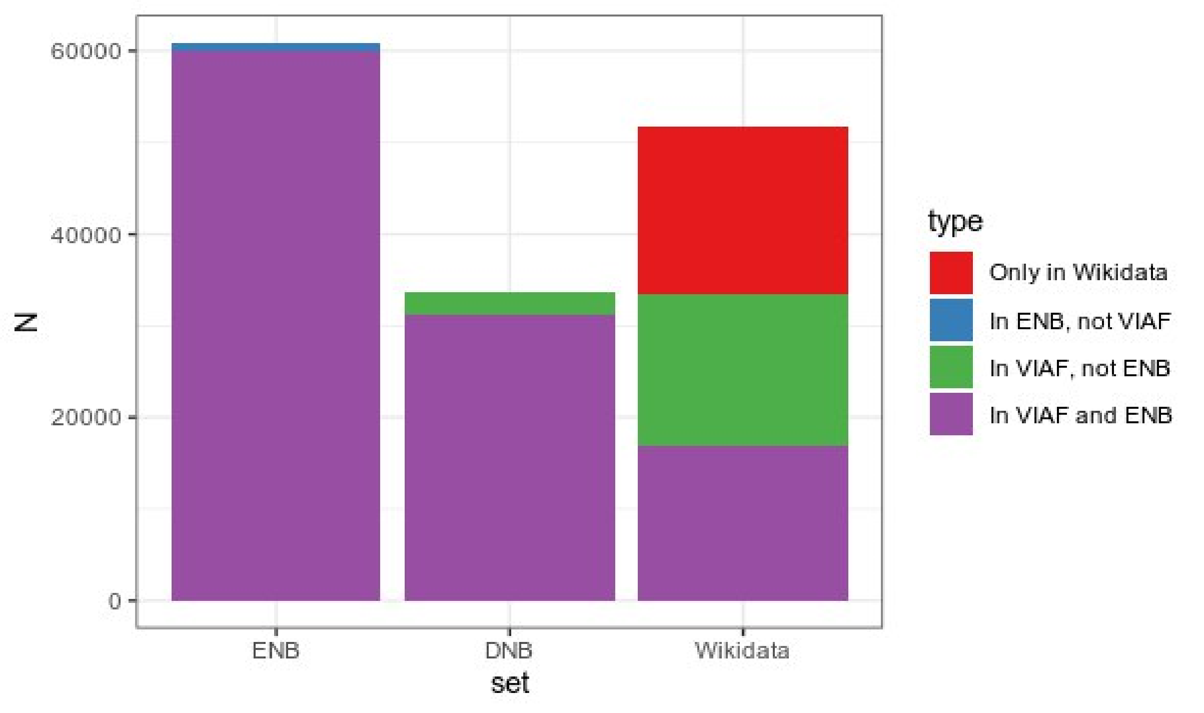
```
#works <- works#[!is.na(koht),.N,by=koht]
works <- works[,koht:=str_replace_all(koht,"s$","")]
works <- works[,koht:=str_replace_all(koht,"l$","")]
#works <- works[!duplicated(works)]
#places[places!=""&places!="S.l."&places!="S.l.,"&places!="S. l."&places!="S. l.,"]
works <- works[koht!=""&koht!="S.l."&koht!="S.l.,"&koht!="S. l."&koht!="S. l.,"]
works[str_detect(koht,"Paide"),koht:="Paide"]
works[str_detect(koht,"Weissenstein"),koht:="Paide"]
works[str_detect(koht,"Вейсенштейн"),koht:="Paide"]
works[str_detect(koht,"Вейссенштейн"),koht:="Paide"]
works[str_detect(koht,"Haapsalu"),koht:="Haapsalu"]
works[str_detect(koht,"Hapsa"),koht:="Haapsalu"]
works[str_detect(koht,"Гапсаль"),koht:="Haapsalu"]

works[str_detect(koht,"Keila"),koht:="Keila"]
works[str_detect(koht,"Rakvere"),koht:="Rakvere"]
works[str_detect(koht,"Wesenberg"),koht:="Rakvere"]
works[str_detect(koht,"Везенберг"),koht:="Rakvere"]
```

```
works[kirjastus=="w.bormi pär.",kir
works[kirjastus=="f.w.borm",kirjastu
works[str_detect(kirjastus,"noor ees
works[str_detect(kirjastus,"mutsu")
works[str_detect(kirjastus,"ploompu
works[str_detect(kirjastus,"postimeh
works[str_detect(kirjastus,"postimee
works[str_detect(kirjastus,"h\\.laak
works[str_detect(kirjastus,"eesti ki
works[kirjastus=="eesti kirjandusese
works[kirjastus=="hermann",kirjastus
works[kirjastus=="hermann'i raamatuk
works[kirjastus=="pealadu hermanni rmtkpl.",kirjastus:="k.a.hermann"]
works[kirjastus=="hermanni raamatukauplus",kirjastus:="k.a.hermann"]
works[kirjastus=="hermann'i rmtkpl.",kirjastus:="k.a.hermann"]
works[kirjastus=="pealadu hermanni kaupluses",kirjastus:="k.a.hermann"]
works[kirjastus=="leoke'se kirjastus",kirjastus:="h.leoke"]
works[kirjastus=="leoke",kirjastus:="h.leoke"]
works[kirjastus=="leoke'se raamatuäri antikvariaat",kirjastus:="h.leoke"]
```

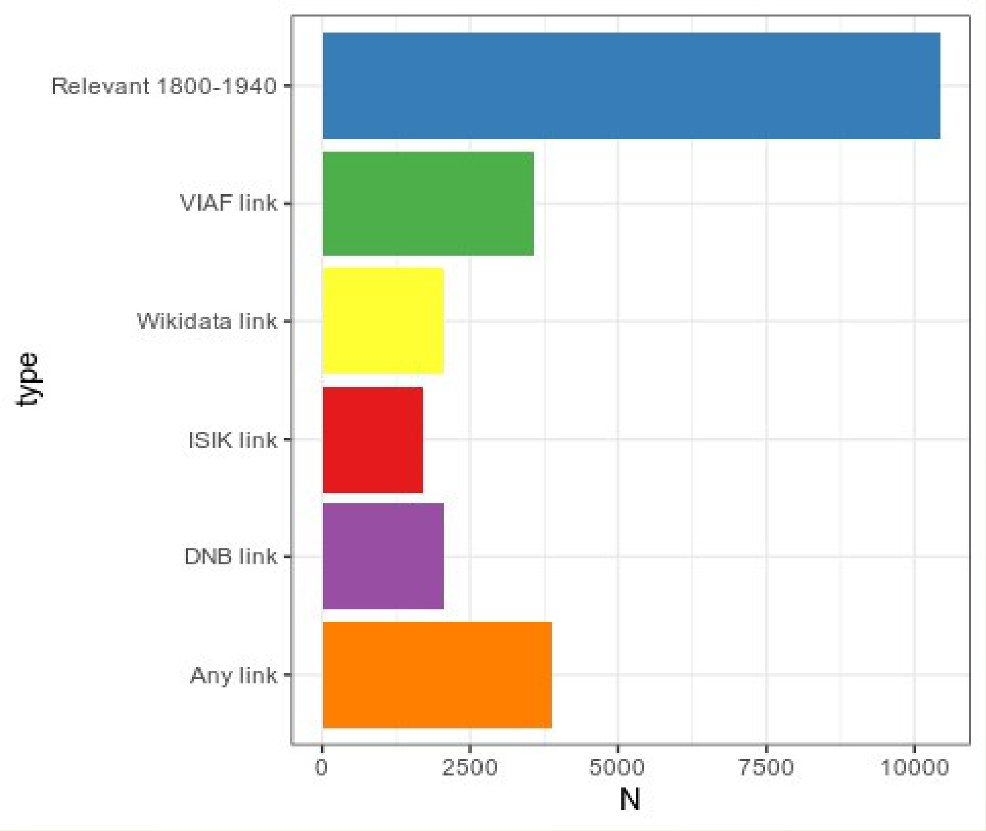
Results of linking

- Linkability of archives



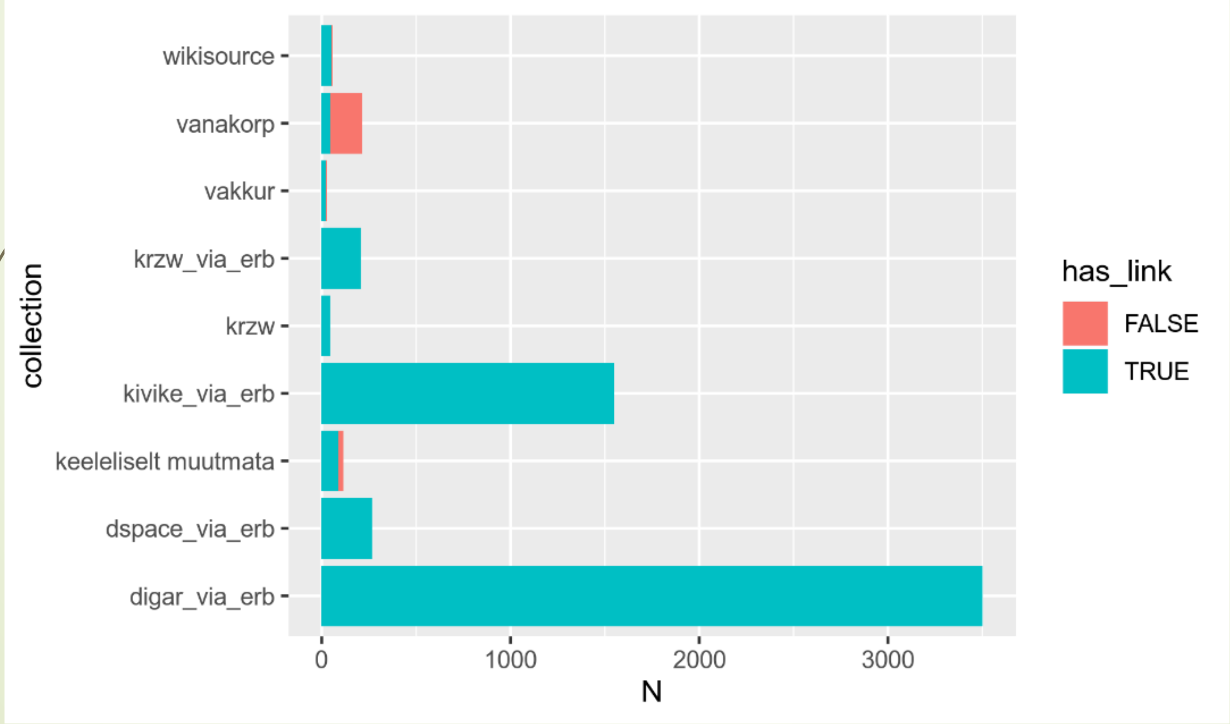
Results of linking

- Linked author metainformation



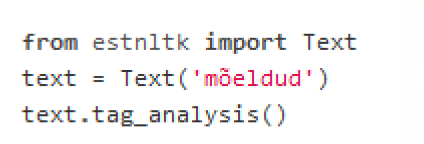
Results of text collection

- 5132 texts total, of 4186 unique publications

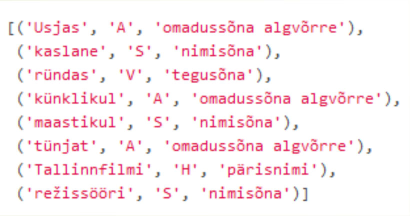


Processing the corpus

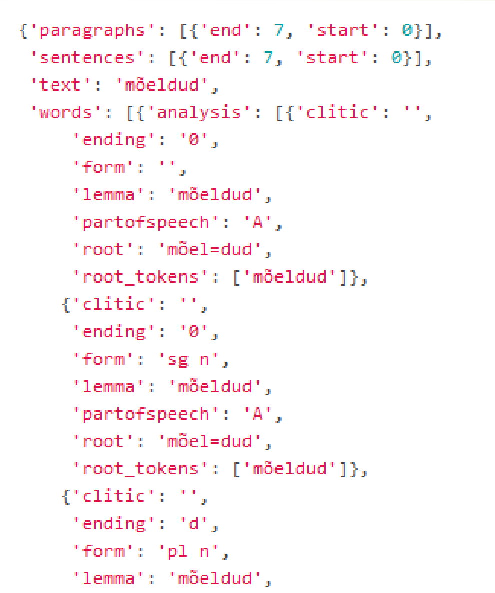
- Raw texts can be processed
- Lemmatize, POS-tag etc (used Python EstNLTK)



```
from estnltk import Text
text = Text('mõeldud')
text.tag_analysis()
```



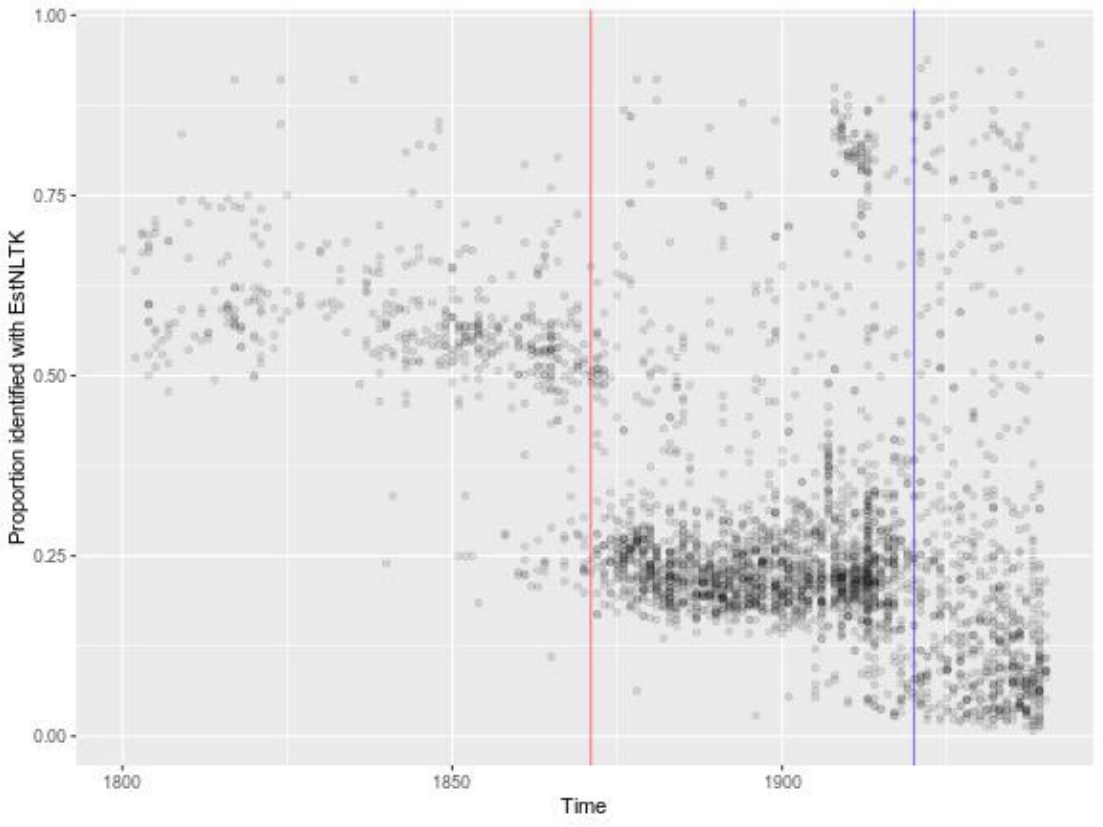
```
[('Usjas', 'A', 'omadussõna algvõrre'),
 ('kaslane', 'S', 'nimisõna'),
 ('ründas', 'V', 'tegusõna'),
 ('künklikul', 'A', 'omadussõna algvõrre'),
 ('maastikul', 'S', 'nimisõna'),
 ('tünjat', 'A', 'omadussõna algvõrre'),
 ('Tallinnfilmi', 'H', 'pärisnimi'),
 ('režissööri', 'S', 'nimisõna')]
```



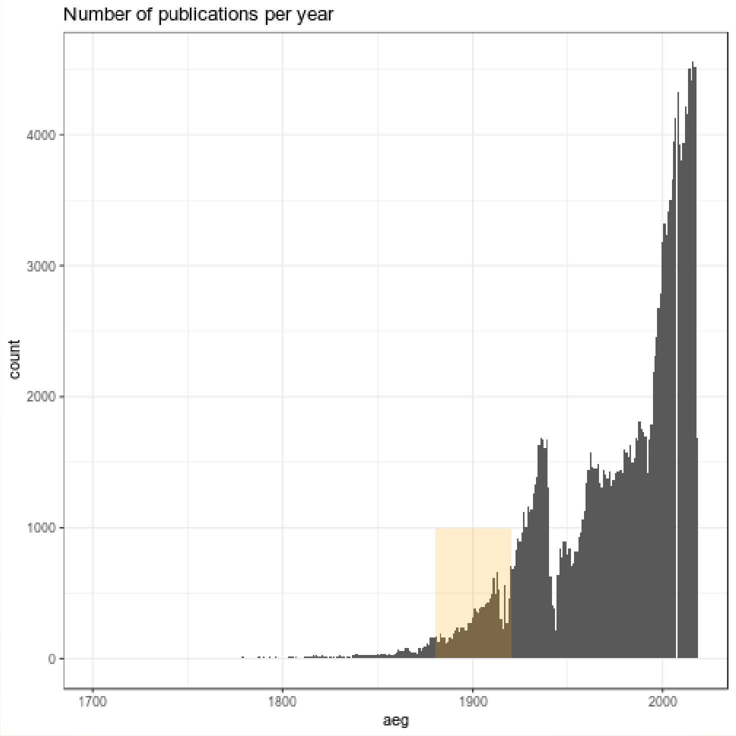
```
{'paragraphs': [{'end': 7, 'start': 0}],
 'sentences': [{'end': 7, 'start': 0}],
 'text': 'mõeldud',
 'words': [{'analysis': [{'clitic': '',
     'ending': '0',
     'form': '',
     'lemma': 'mõeldud',
     'partofspeech': 'A',
     'root': 'mõel=dud',
     'root_tokens': ['mõeldud']},
    {'clitic': '',
     'ending': '0',
     'form': 'sg n',
     'lemma': 'mõeldud',
     'partofspeech': 'A',
     'root': 'mõel=dud',
     'root_tokens': ['mõeldud']},
    {'clitic': '',
     'ending': 'd',
     'form': 'pl n',
     'lemma': 'mõeldud',
```

Results of the corpus

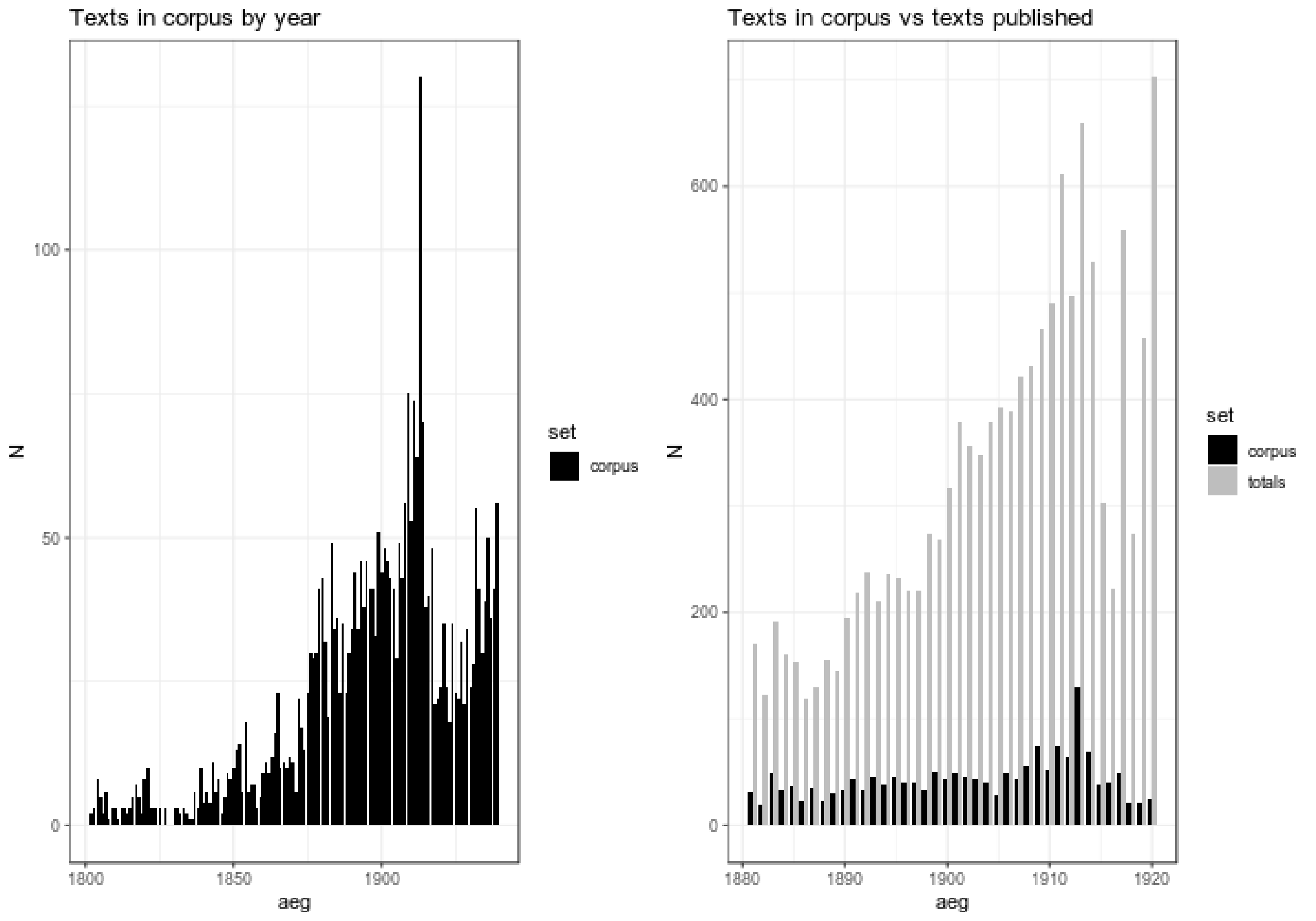
- NLP success rate over time



The published texts

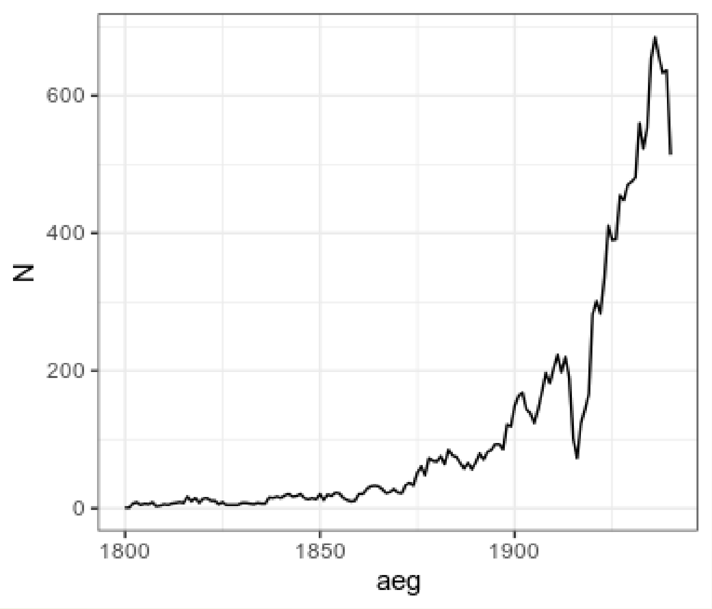


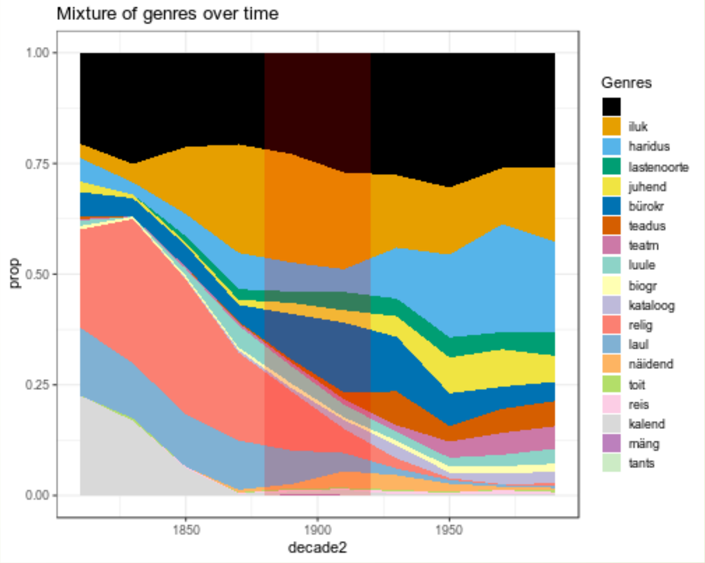
Representativeness

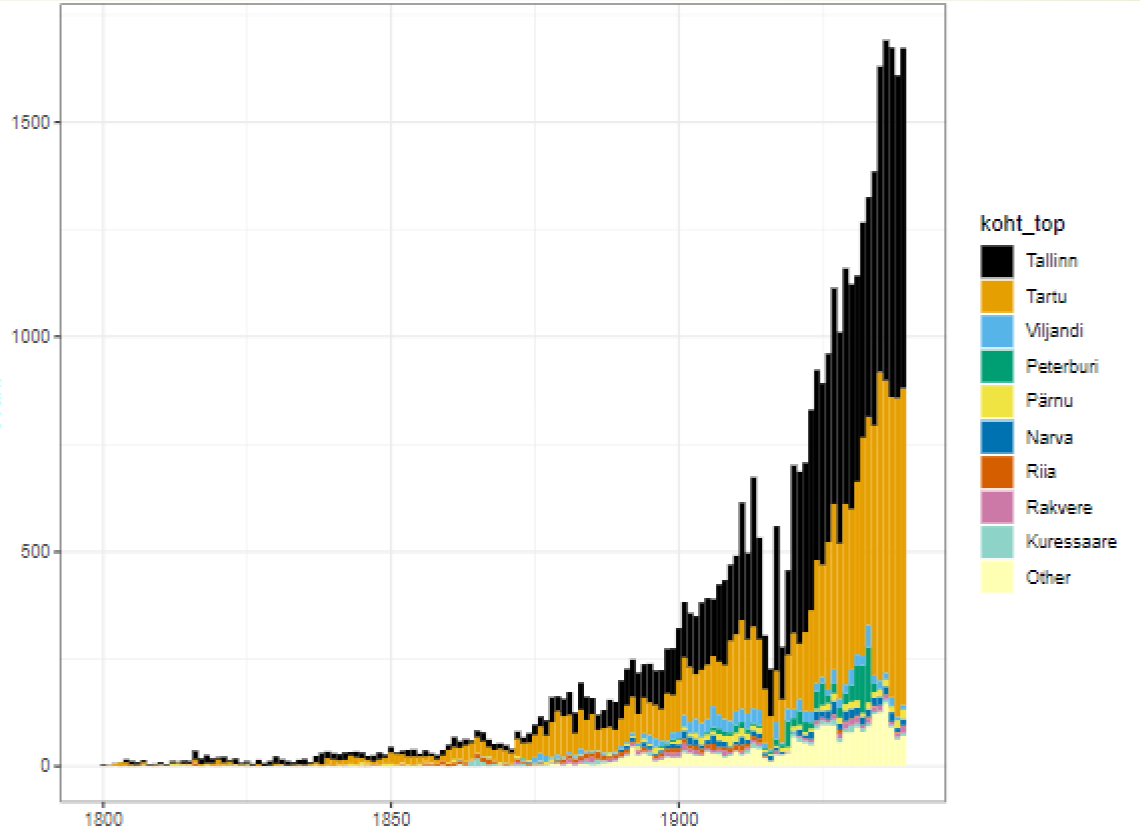


Publishing industry

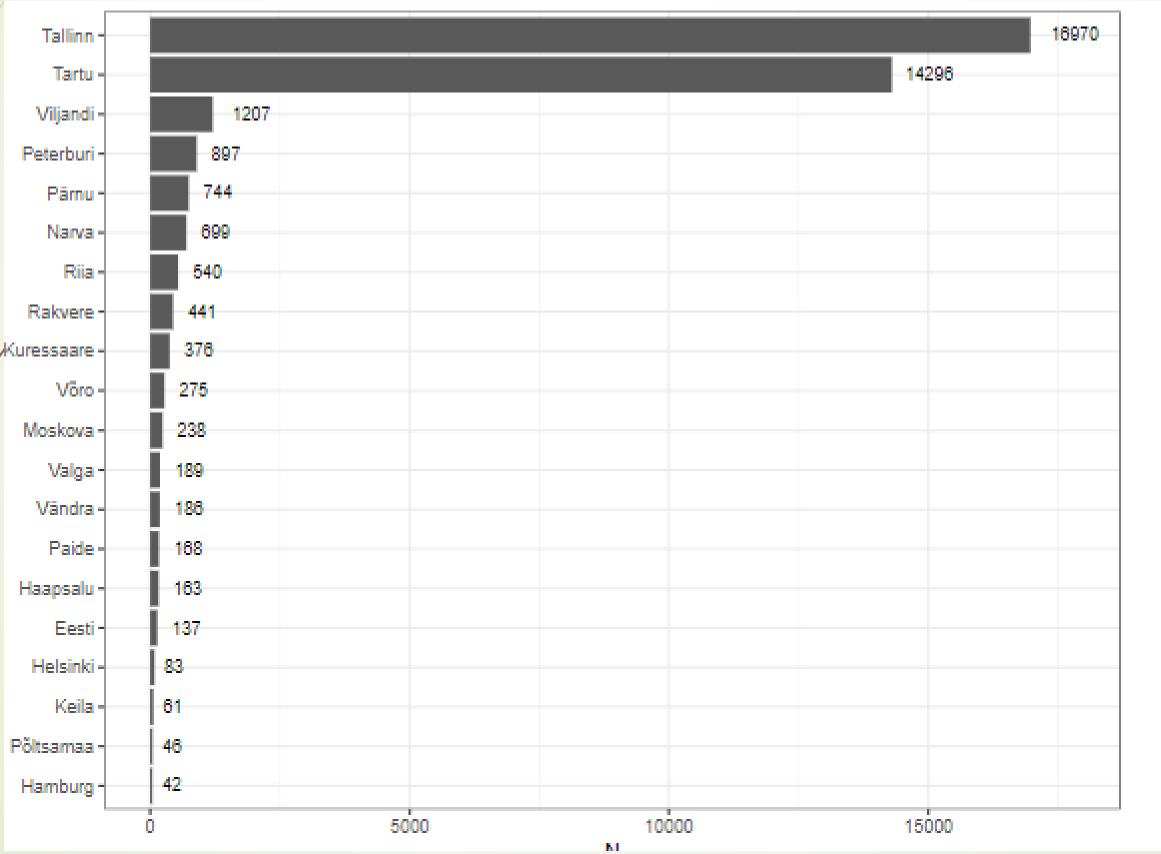
- More authors and open genres





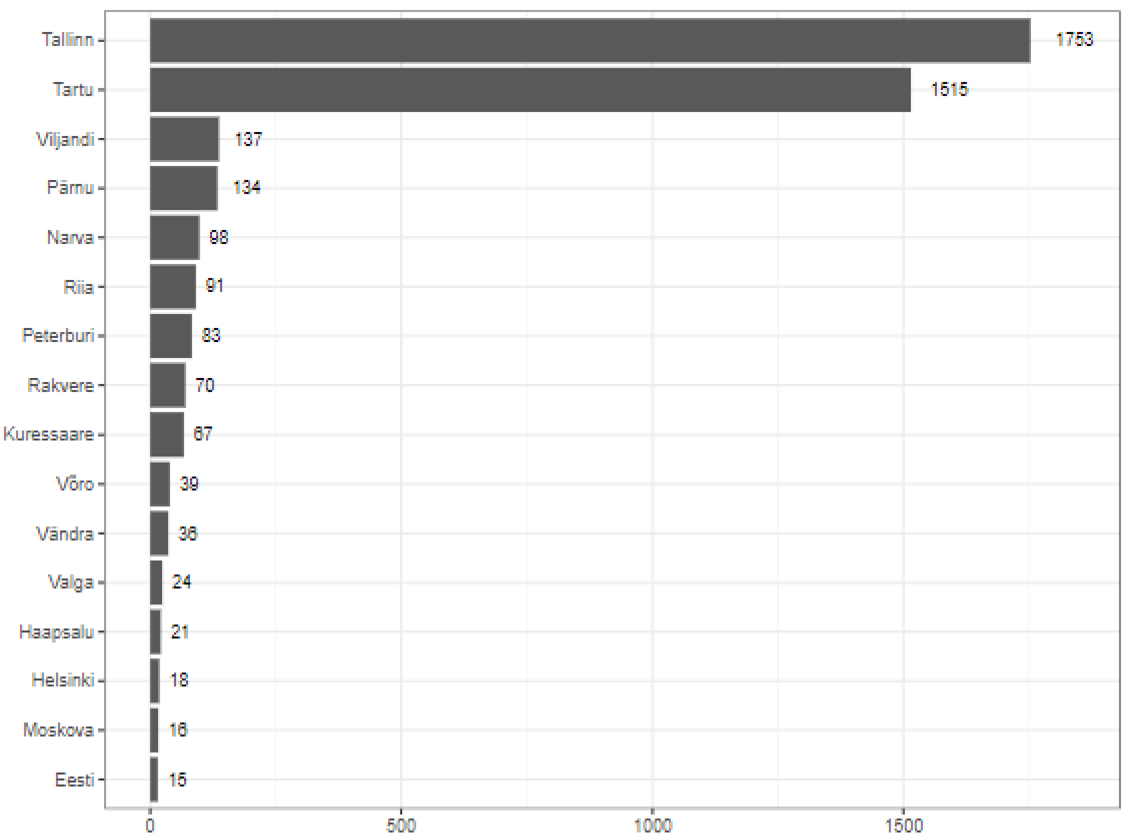

1500
1000
500
0
1800
1850
1900
koht_top
Tallinn
Tartu
Viljandi
Peterburi
Pärnu
Narva
Riia
Rakvere
Kuressaare
Other

A few cities dominate



In corpus

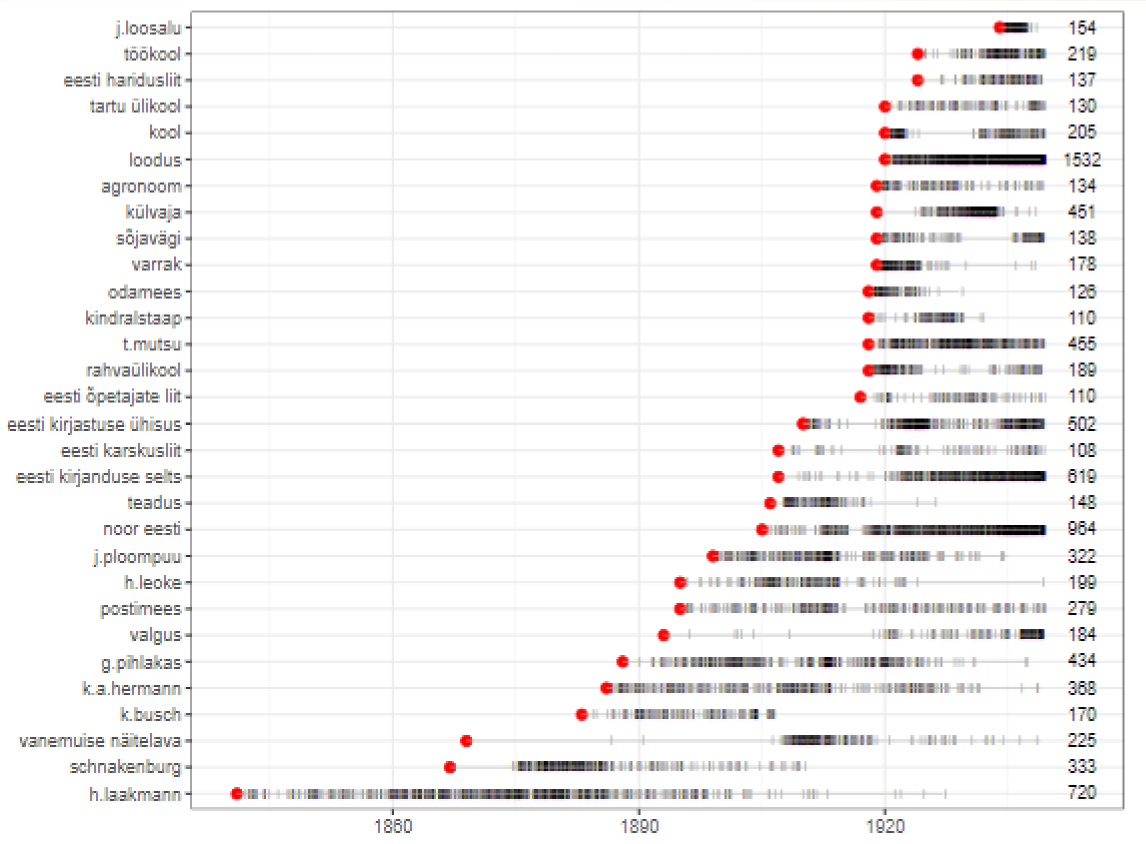
- S



Tallinn
Tartu
Viljandi
Pärnu
Narva
Riia
Peterburi
Rakvere
Kuressaare
Võro
Vändra
Valga
Haapsalu
Helsinki
Moskova
Eesti
1753
1515
137
134
98
91
83
70
67
39
38
24
21
18
16
15
0
500
1000
1500

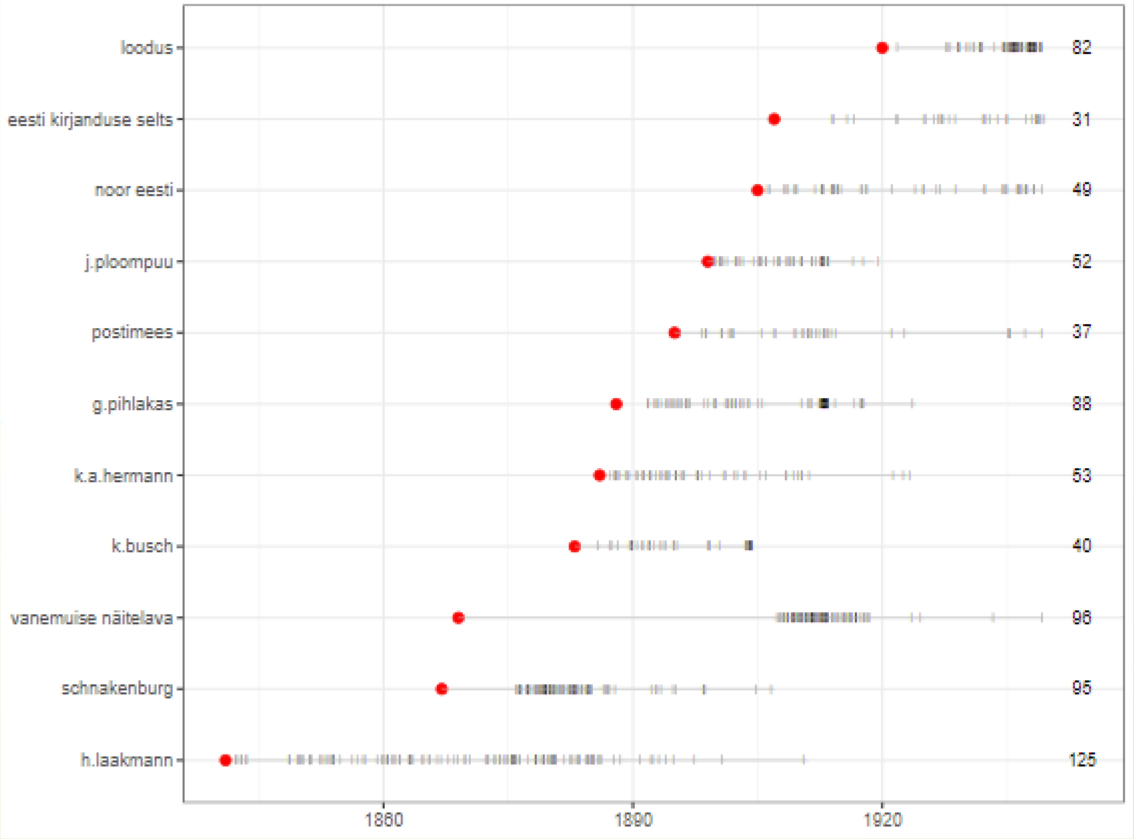
Publishers

- Top publishers (harmonized)



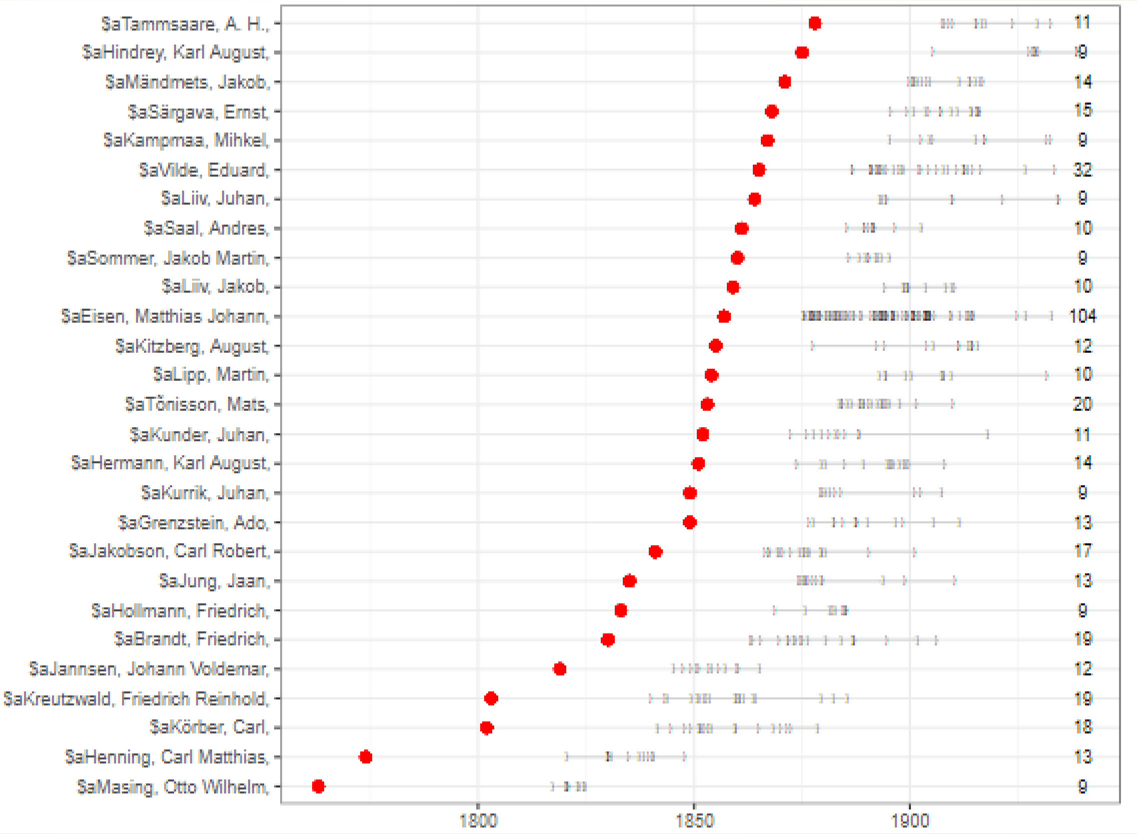
Publishers

- Top publishers (harmonized) within corpus



Authors

- Top authors (harmonized) within corpus



Other types of data

- There is a lot of relevant scholarship.
- Just thinking about it in terms of „data“ is new.

- Needs creativity in finding and utilizing the data

Biographic data

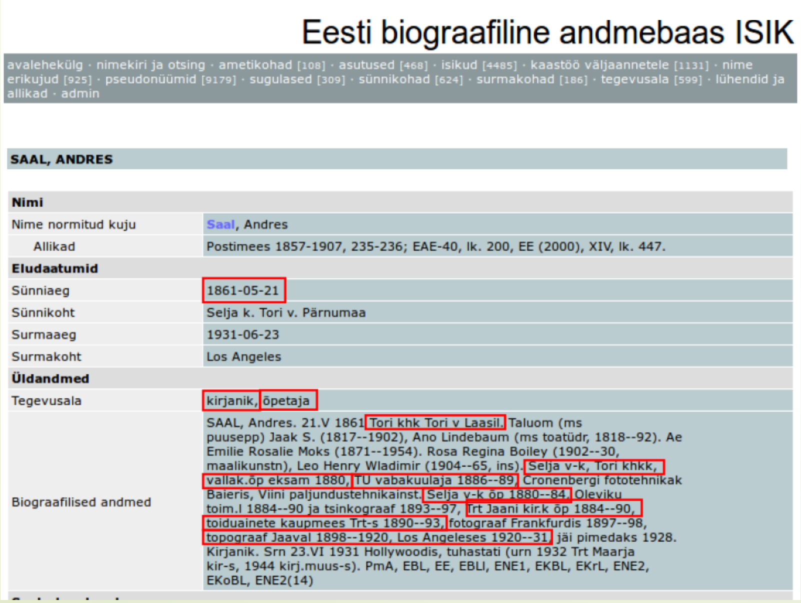
- Assemble life histories
  - from various sources

WIKIDATA

VIKIPEEDIA
Vaba entsüklopeedia

EESTI RAHVUS-RAAMATUKOGU

DEUTSCHE NATIONAL BIBLIOTHEK

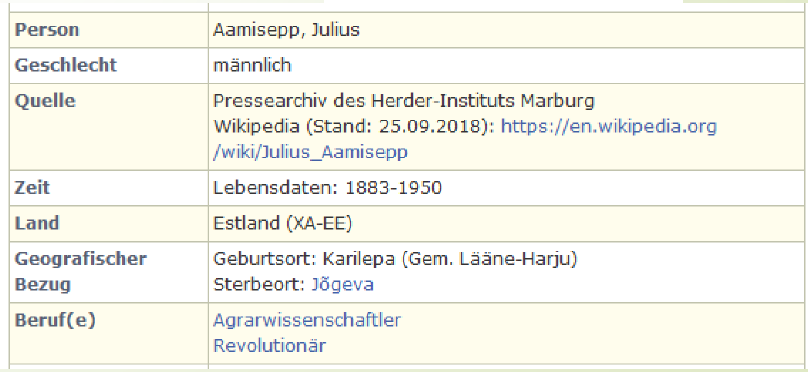


Eesti biograafiline andmebaas ISIK

avalehekülg · nimekiri ja otsing · ametikohad [108] · asutused [468] · isikud [4485] · kaastöö väljaannetele [1131] · nime erikujud [925] · pseudonüümid [9179] · sugulased [309] · sünnikohad [624] · surmakohad [186] · tegevusala [599] · lühendid ja allikad · admin

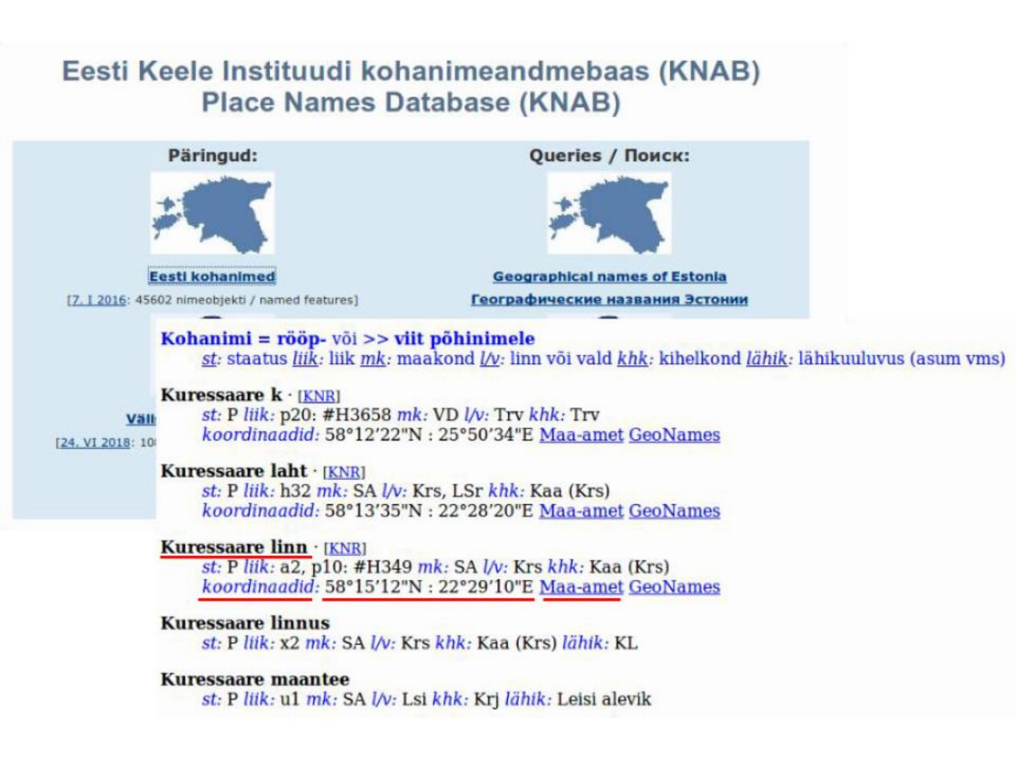
SAAL, ANDRES

Nimi	
Nime normitud kuju	Saal, Andres
Allikad	Postimees 1857-1907, 235-236; EAE-40, lk. 200, EE (2000), XIV, lk. 447.
Eludaatumid	
Sünniaeg	1861-05-21
Sünnikoht	Selja k. Tori v. Pärnumaa
Surmaaeg	1931-06-23
Surmakoht	Los Angeles
Üldandmed	
Tegevusala	kirjanik, õpetaja
Biograafilised andmed	SAAL, Andres. 21.V 1861 Tori khk Tori v Laasil. Taluom (ms puusepp) Jaak S. (1817--1902), Ano Lindebaum (ms toatüdr, 1818--92). Ae Emilie Rosalie Moks (1871--1954). Rosa Regina Boiley (1902--30, maalikunstn), Leo Henry Wladimir (1904--65, ins). Selja v-k, Tori khkk, vallak.õp eksam 1880, TÜ vabakuulaja 1886--89, Cronenbergi fototehnikak Baieris, Viini paljundustehnikainst. Selja v-k õp 1880--84, Oleviku toim.l 1884--90 ja tsinkograaf 1893--97, Trt Jaani kir.k õp 1884--90, toiduainete kaupmees Trt-s 1890--93, fotograaf Frankfurdis 1897--98, topograaf Jaaval 1898--1920, Los Angeleses 1920--31, jäi pimedaks 1928. Kirjanik. Srn 23.VI 1931 Hollywoodis, tuhastati (urn 1932 Trt Maarja kir-s, 1944 kirj.muus-s). PmA, EBL, EE, EBLI, ENE1, EKBL, EKrL, ENE2, EKoBL, ENE2(14)



Person	Aamisepp, Julius
Geschlecht	männlich
Quelle	Pressearchiv des Herder-Instituts Marburg Wikipedia (Stand: 25.09.2018): https://en.wikipedia.org/wiki/Julius_Aamisepp
Zeit	Lebensdaten: 1883-1950
Land	Estland (XA-EE)
Geografischer Bezug	Geburtsort: Karilepa (Gem. Lääne-Harju) Sterbeort: Jõgeva
Beruf(e)	Agrarwissenschaftler Revolutionär

Placename locations



Eesti Keele Instituudi kohanimeandmebaas (KNAB)
Place Names Database (KNAB)

Päringud:

Eesti kohanimed

[7. I 2016: 45602 nimeobjekti / named features]

Väli

[24. VI 2018: 10

Queries / Поиск:

Geographical names of Estonia

Географические названия Эстонии

Kohanimi = rööp- või **>> viit põhinimele**
st: staatus *liik:* liik *mk:* maakond *l/v:* linn või vald *khk:* kihelkond *lähik:* lähikuuluvus (asum vms)

Kuressaare k · [KNR]
st: P *liik:* p20: #H3658 *mk:* VD *l/v:* Trv *khk:* Trv
koordinaadid: 58°12′22"N : 25°50′34"E Maa-amet GeoNames

Kuressaare laht · [KNR]
st: P *liik:* h32 *mk:* SA *l/v:* Krs, LSr *khk:* Kaa (Krs)
koordinaadid: 58°13′35"N : 22°28′20"E Maa-amet GeoNames

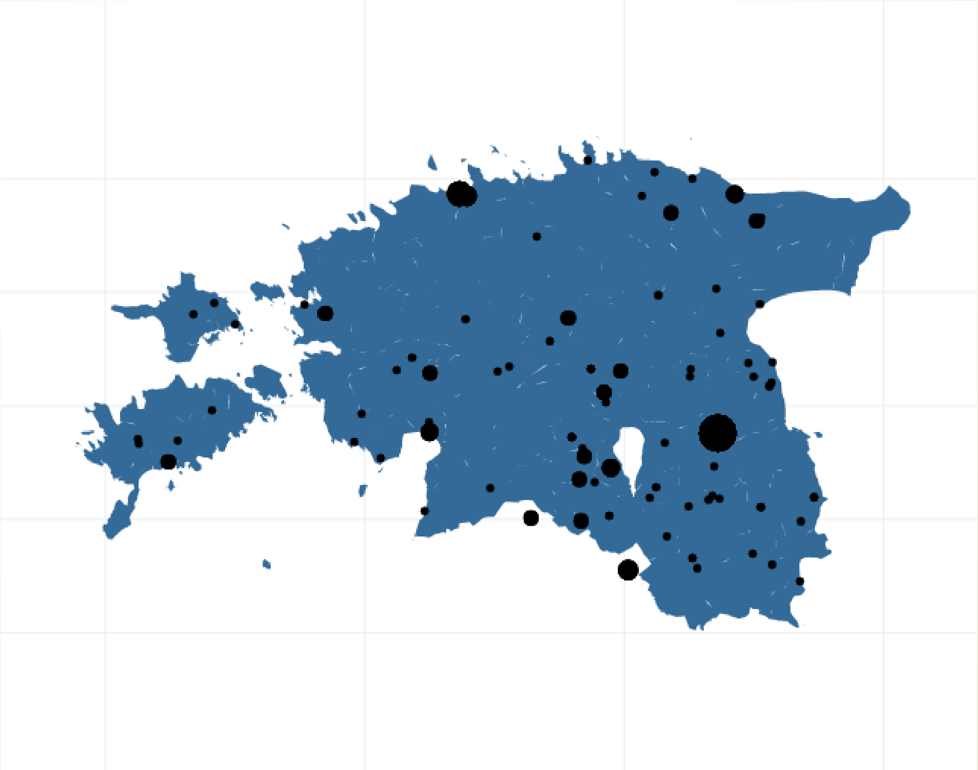
Kuressaare linn · [KNR]
st: P *liik:* a2, p10: #H349 *mk:* SA *l/v:* Krs *khk:* Kaa (Krs)
koordinaadid: 58°15′12"N : 22°29′10"E Maa-amet GeoNames

Kuressaare linnus
st: P *liik:* x2 *mk:* SA *l/v:* Krs *khk:* Kaa (Krs) *lähik:* KL

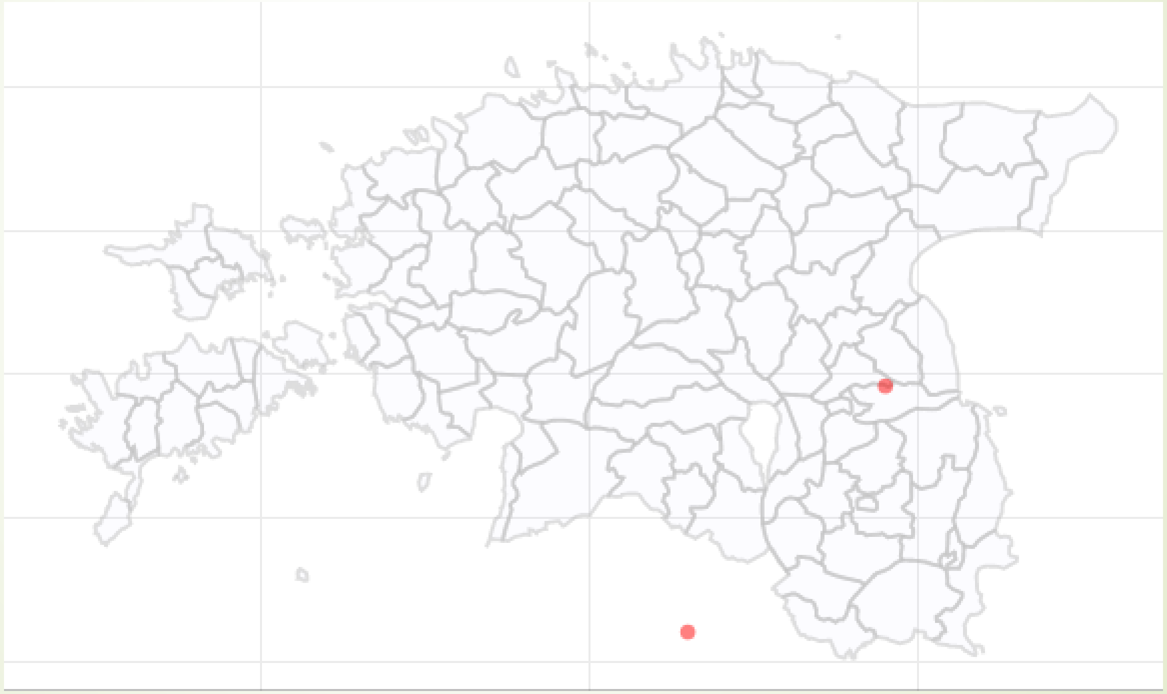
Kuressaare maantee
st: P *liik:* u1 *mk:* SA *l/v:* Lsi *khk:* Krj *lähik:* Leisi alevik

Birthplaces of writers

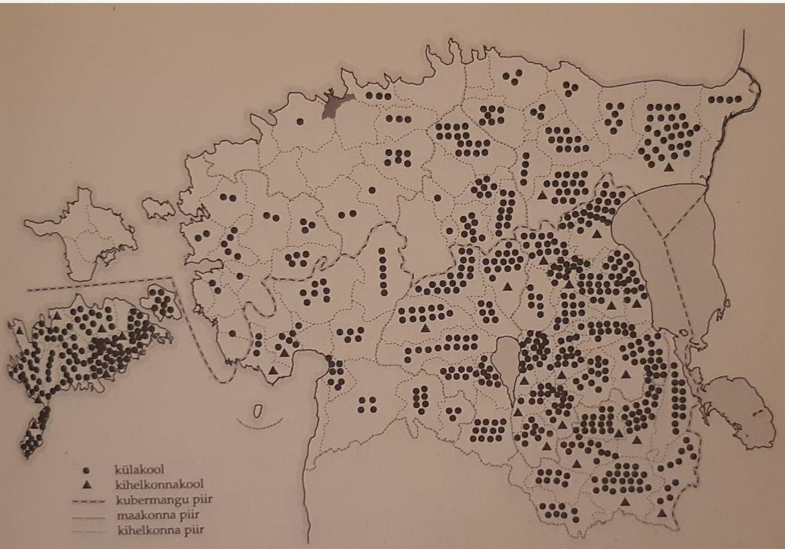
- Some birthplaces of writers in corpus



Birthplaces by decade



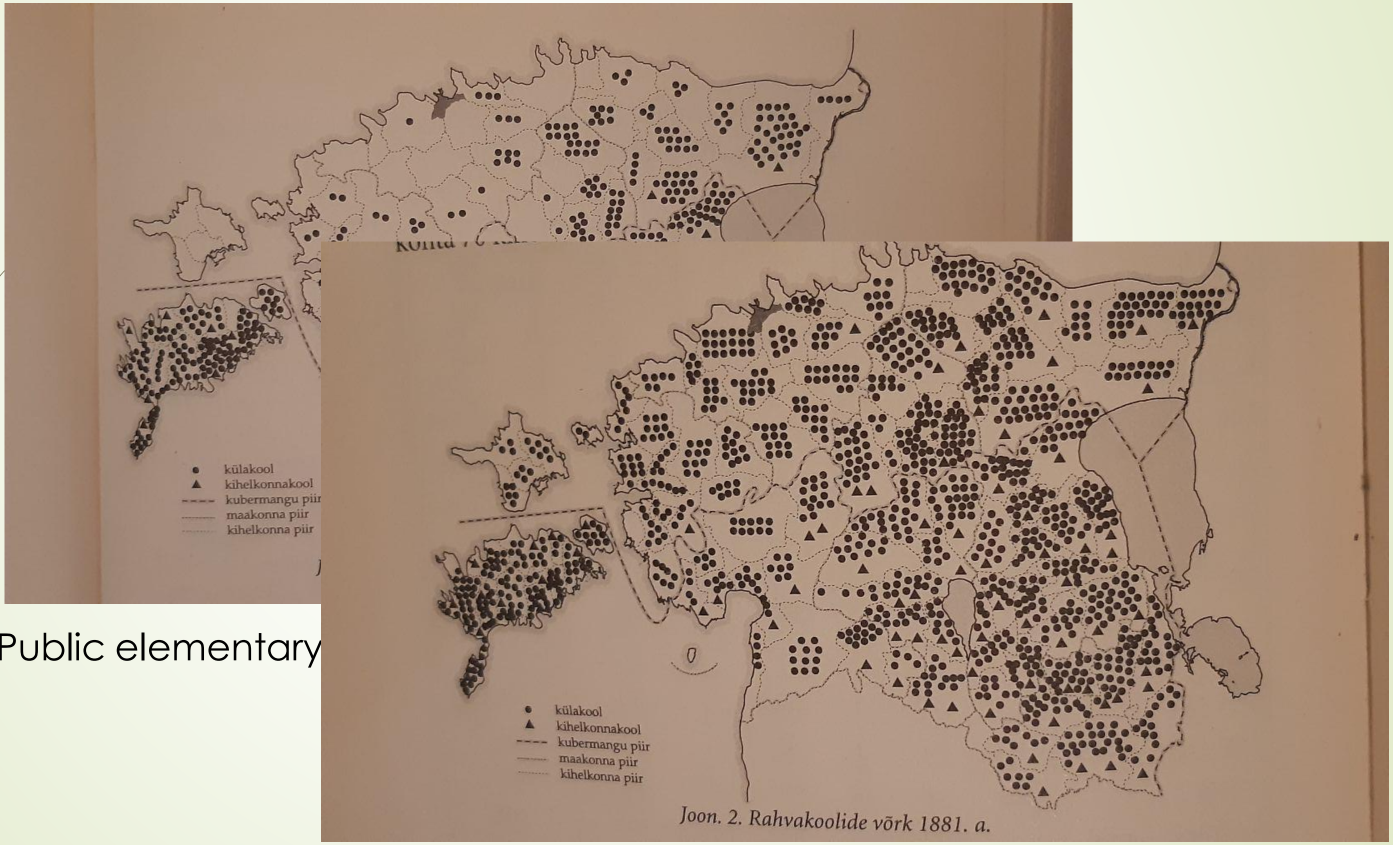
Education by decade



Joon. 1. Eesti rahvakoolide võrk 1851. aastal

Public elementary school network in 1851

Education by decade

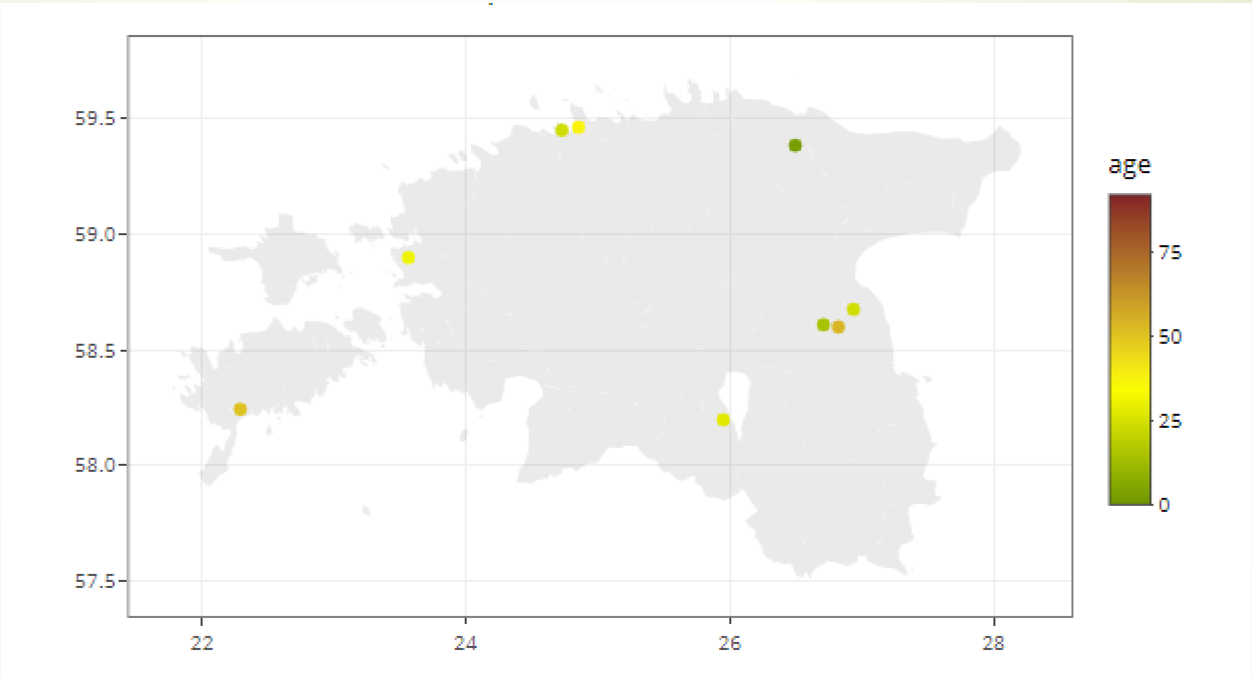


Joon. 2. Rahvakoolide võrk 1881. a.

Public elementary

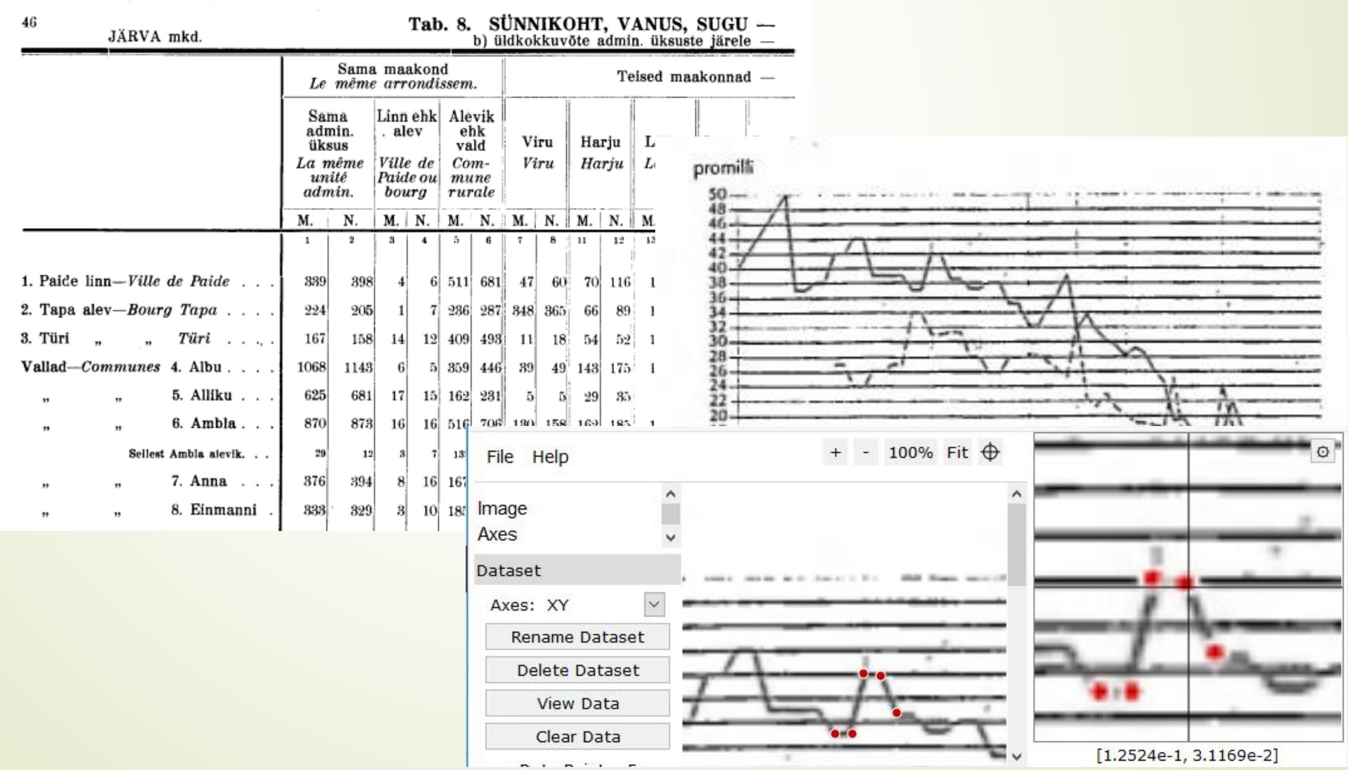
Public elementary school network in 1881

Life histories of writers



Demographic data

- Censuses and analyses

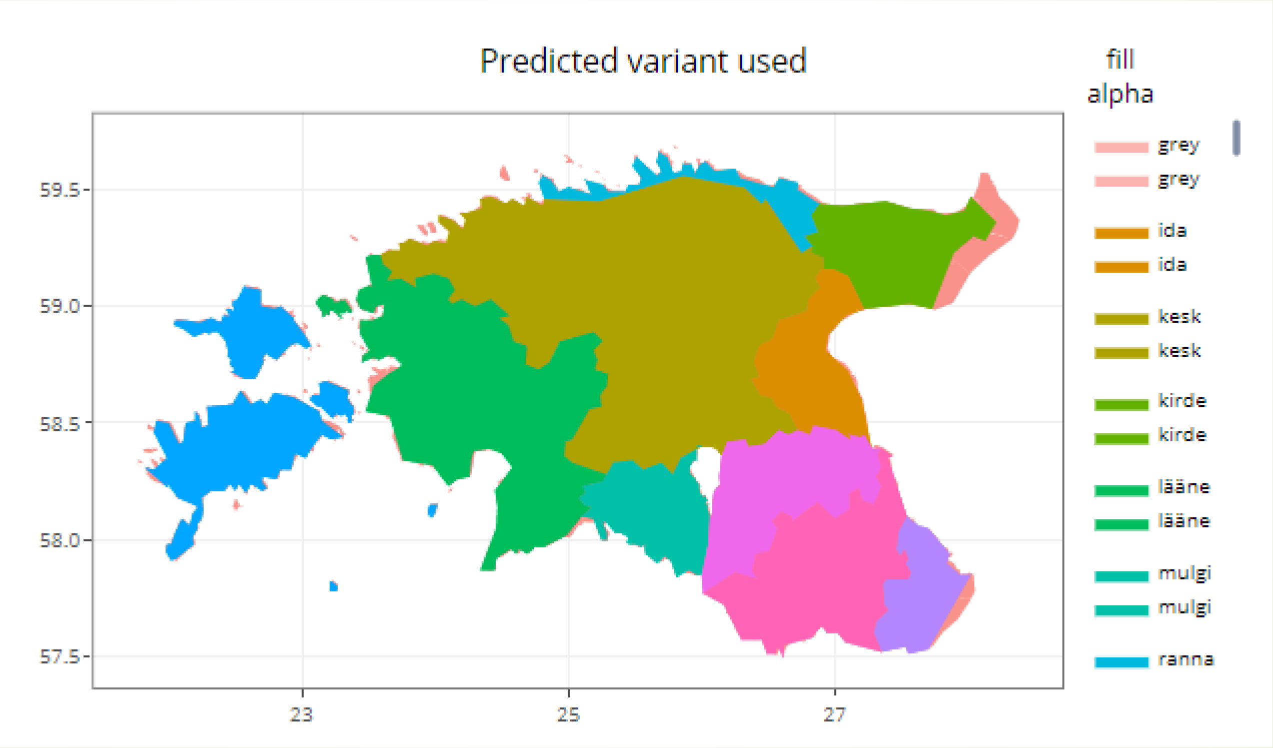


46 JÄRVA mkd.

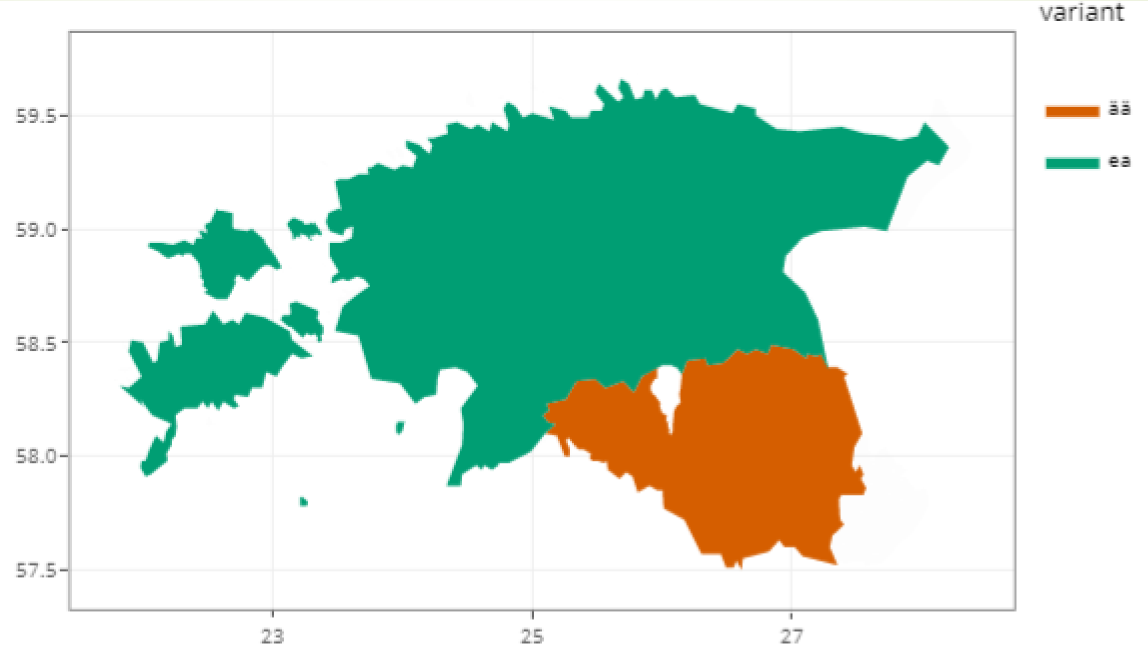
Tab. 8. SÜNNIKOHT, VANUS, SUGU —
b) üldkokkuvõte admin. üksuste järele —

	Sama maakond *Le même arrondissem.*						Teised maakonnad —				
	Sama admin. üksus *La même unité admin.*		Linn ehk alev *Ville de Paide ou bourg*		Alevik ehk vald *Commune rurale*		Viru *Viru*		Harju *Harju*		L *L*
	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.
	1	2	3	4	5	6	7	8	11	12	13
1. Paide linn—*Ville de Paide* . . .	339	398	4	6	511	681	47	60	70	116	1
2. Tapa alev—*Bourg Tapa*	224	205	1	7	236	287	348	365	66	89	1
3. Türi „ „ *Türi*	167	158	14	12	409	493	11	18	54	52	1
Vallad—*Communes* 4. Albu	1068	1143	6	5	359	446	39	49	143	175	1
„ „ 5. Alliku . . .	625	681	17	15	162	231	5	5	29	35	
„ „ 6. Ambla . . .	870	873	16	16	516	706	130	158	162	185	1
Sellest Ambla alevik. . .	29	12	3	7	13						
„ „ 7. Anna . . .	376	394	8	16	167						
„ „ 8. Einmanni .	333	329	3	10	18						

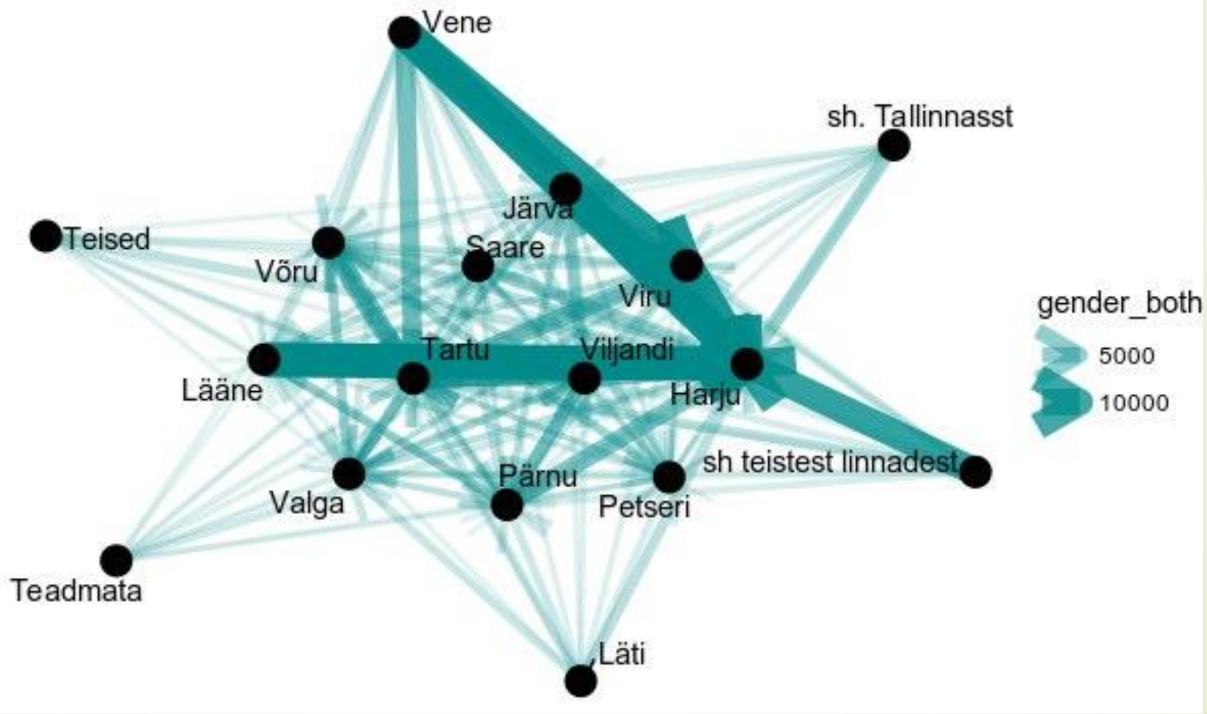
Dialect geography



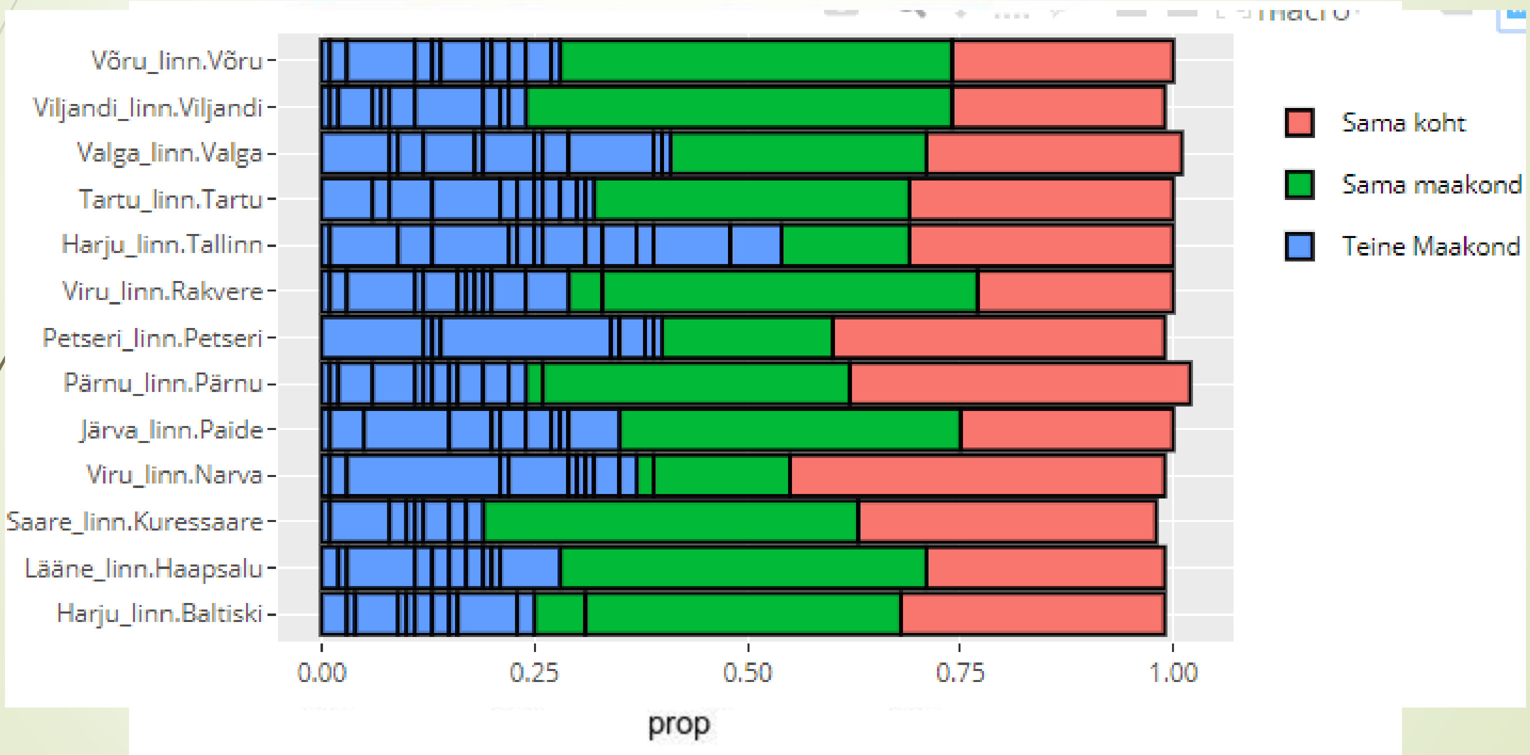
Dialect predicted values



Dialect compositions in cities



Migration and dialects



Getting to research

Operationalizing the question

Making the study

- Specify the measured variables

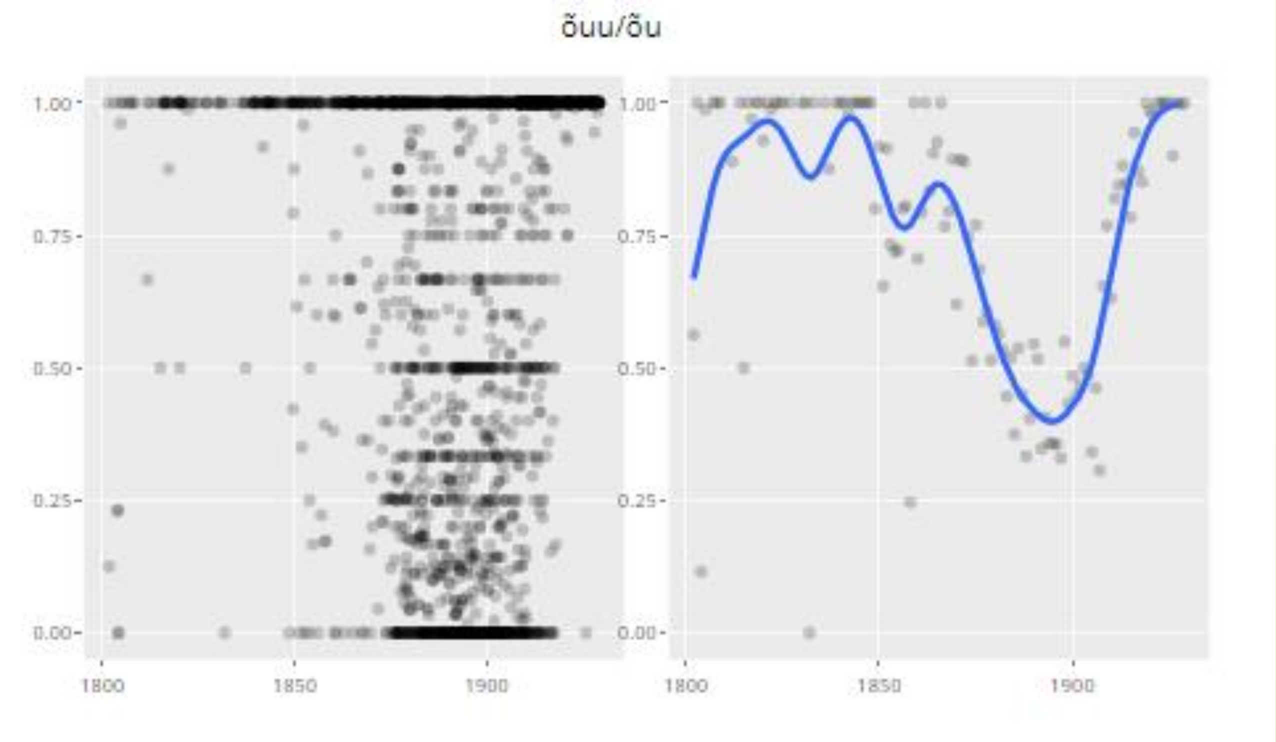
- Measure in suitable texts
- Combine with metadata

- Check the mechanisms

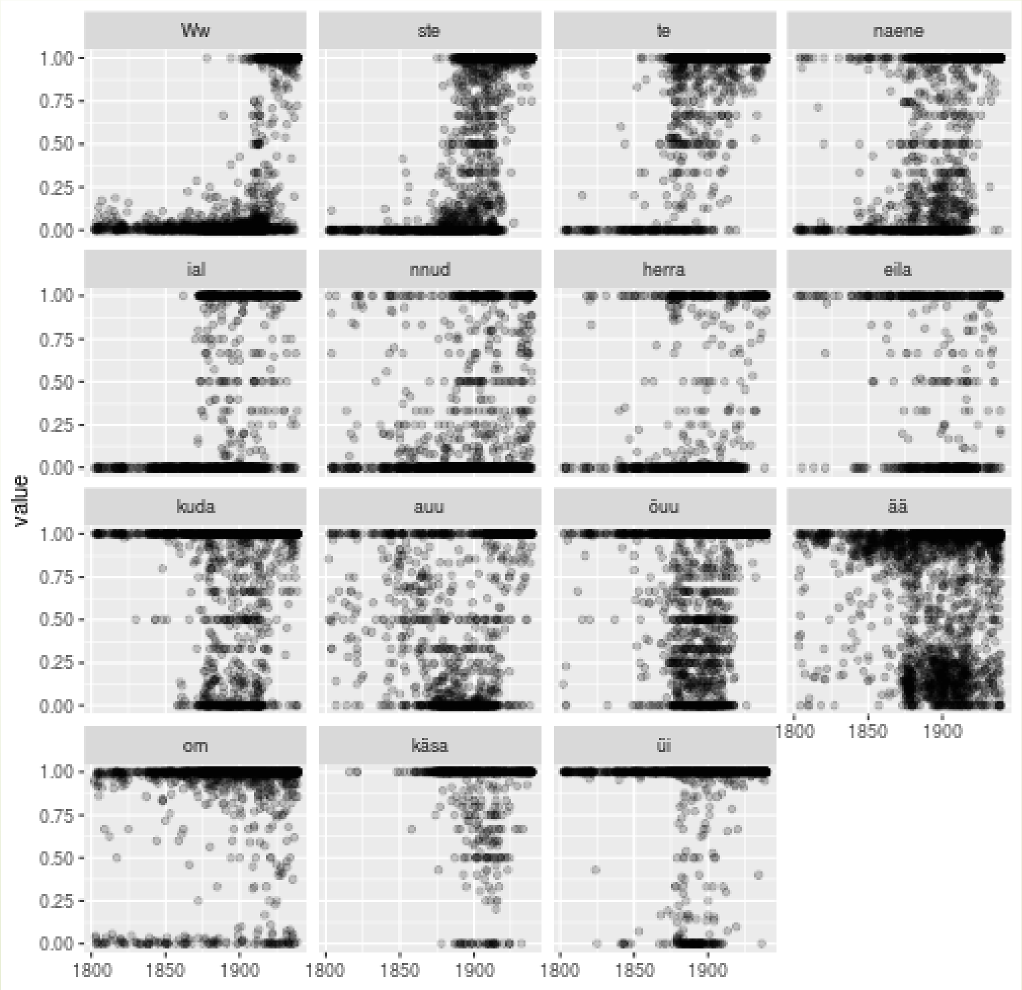
Variants and variation

- A set of variables:
  - w / v – wabariik, vabariik
  - ää / ea – hää, hea; sääl, seal
  - üi / üü – nüid, nüüd
  - herra / härra
  - naine / naene
  - om / on
- Fairly common in frequency
- Have interesting variation in 1880-1920

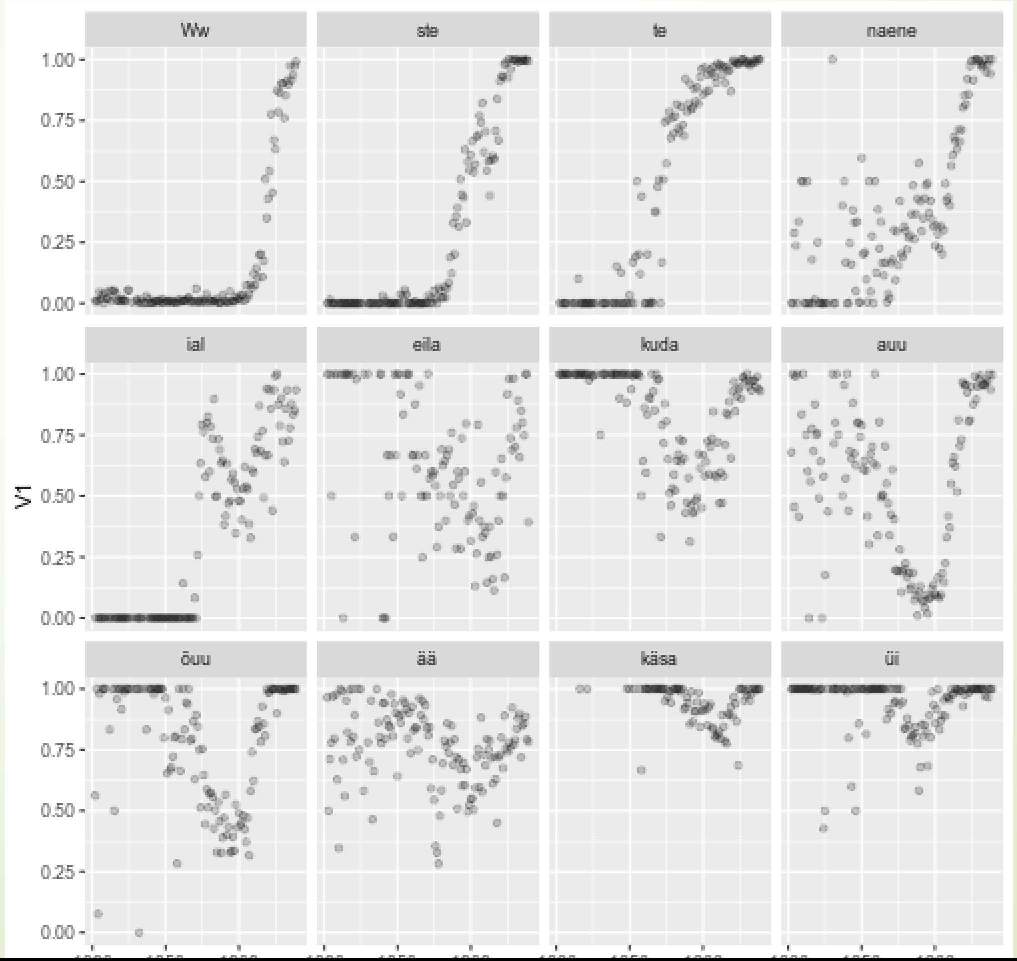
Variants and variation



Study on particular variants

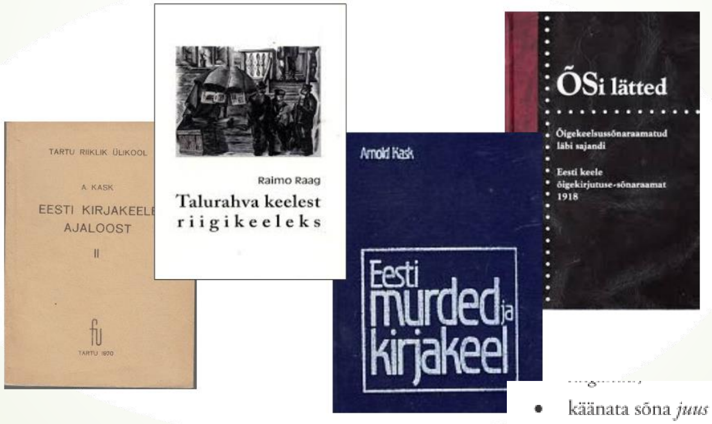


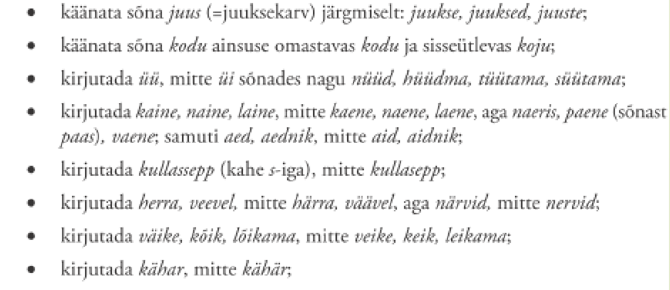
Average trends



Language prescription

- Historian’s overviews


TARTU RIIKLIK ÜLIKOOL
A. KASK
EESTI KIRJAKEELE AJALOOST
II
TARTU 1970
Raimo Raag
Talurahva keelest riigikeeleks
Arnold Kask
Eesti murded ja kirjakeel
ÕSi lätted
Õigekeelsussõnaraamatud läbi sajandi
Eesti keele õigekirjutuse-sõnaraamat 1918

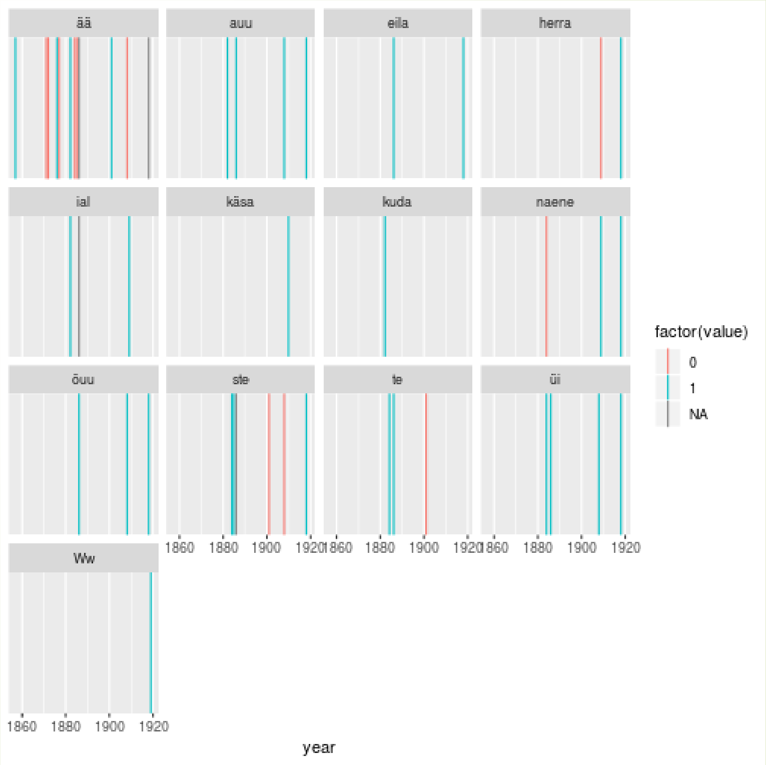


- käänata sõna *juus* (=juuksekarv) järgmiselt: *juukse, juuksed, juuste*;
- käänata sõna *kodu* ainsuse omastavas *kodu* ja sisseütlevas *koju*;
- kirjutada *üü*, mitte *üi* sõnades nagu *nüüd, hüüdma, tüütama, süütama*;
- kirjutada *kaine, naine, laine*, mitte *kaene, naene, laene*, aga *naeris, paene* (sõnast *paas*), *vaene*; samuti *aed, aednik*, mitte *aid, aidnik*;
- kirjutada *kullassepp* (kahe *s*-iga), mitte *kullasepp*;
- kirjutada *herra, veevel*, mitte *härra, väävel*, aga *närvid*, mitte *nervid*;
- kirjutada *väike, kõik, lõikama*, mitte *veike, keik, leikama*;
- kirjutada *kähar*, mitte *kähär*;

Overview of proposed norms in 1909 (Raag 2008)

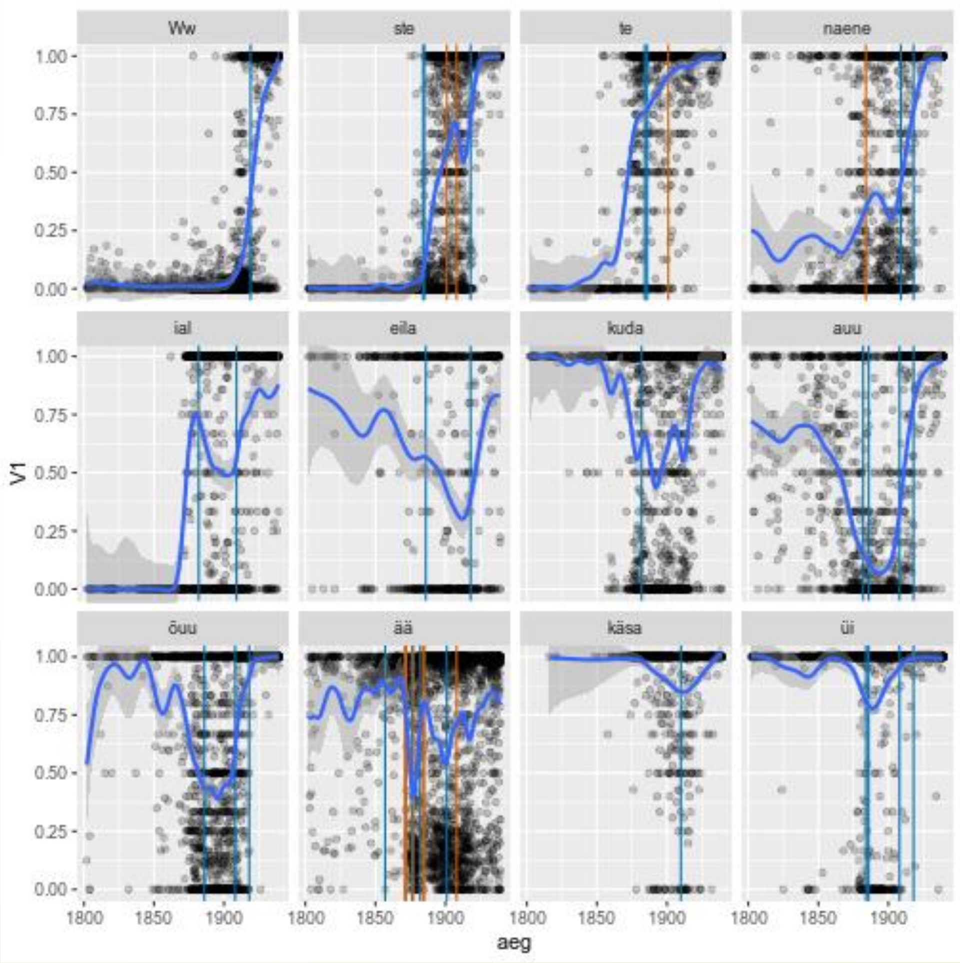
Language prescription

- Prescriptive events on the timeline
- Blue (suggested norm towards 1)
- Red (suggested norm towards 1)

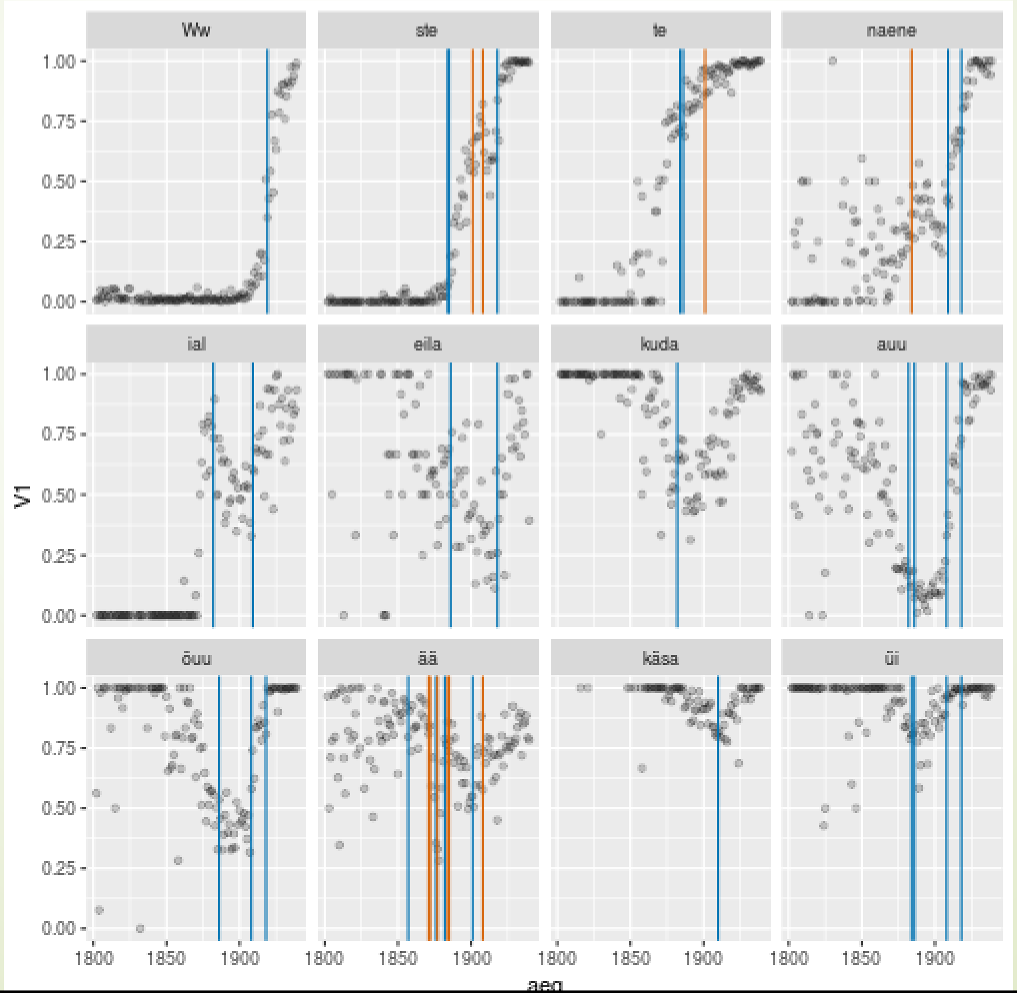


Language prescription

- Prescriptive events align very well with trends in usage.
- => at least some degree of prescriptive influence.



Language prescription

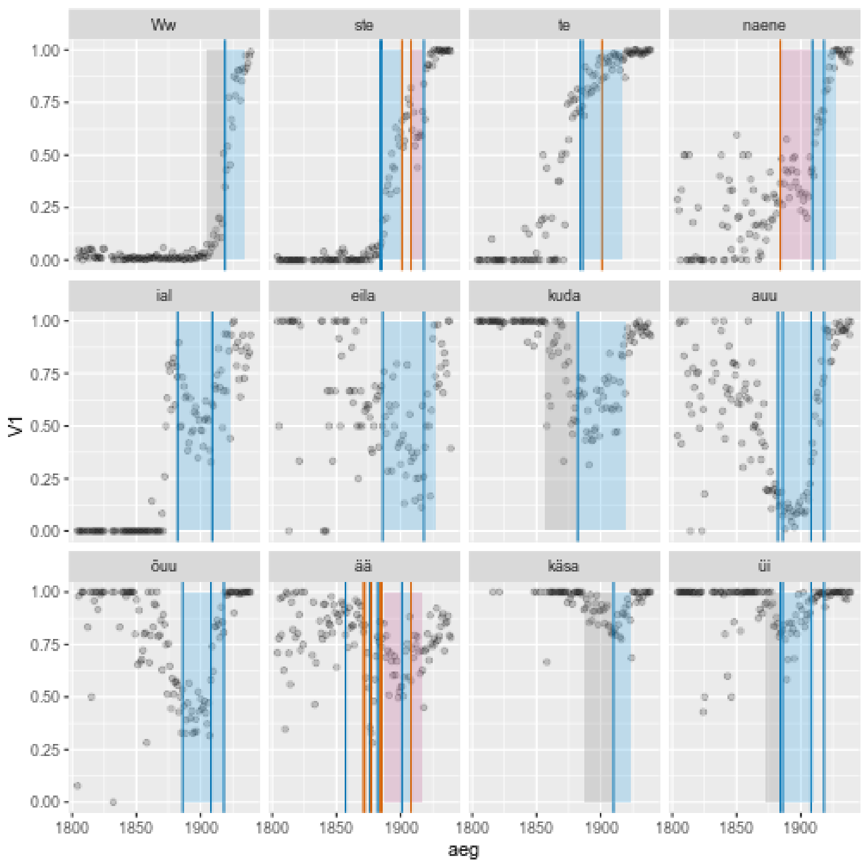


Mechanisms of standardization

- Influences on language usage
  - Home dialect
  - Everyday language use
  - Education
  - Prescription
  - Etc
- What made a suggestion successful?
- Generational change vs individual change?

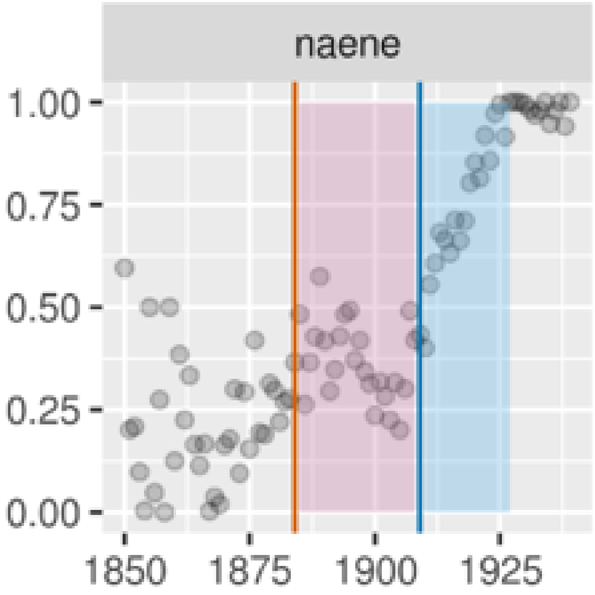
Phases of change

- Looking at the aftermath of prescriptive events
- Blue (suggested norm towards 1)
- Red (suggested norm towards 1)



Simple tendencies in data

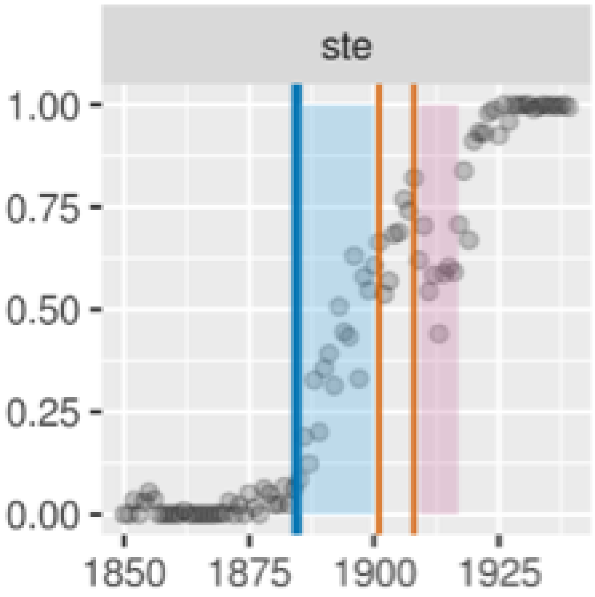
- Significant predictors (logistic regression)
  - Model does not include dialect info



Phase 1		Phase 2	
(n = 199)		(n = 87)	
Trend	→	Trend	↗
Intended	↘	Intended	↗
tradition	↗	tradition	
popsize	↗	**popsize**	↗
edu	↘	**edu**	↗
youth	↘	youth	

Simple tendencies in data

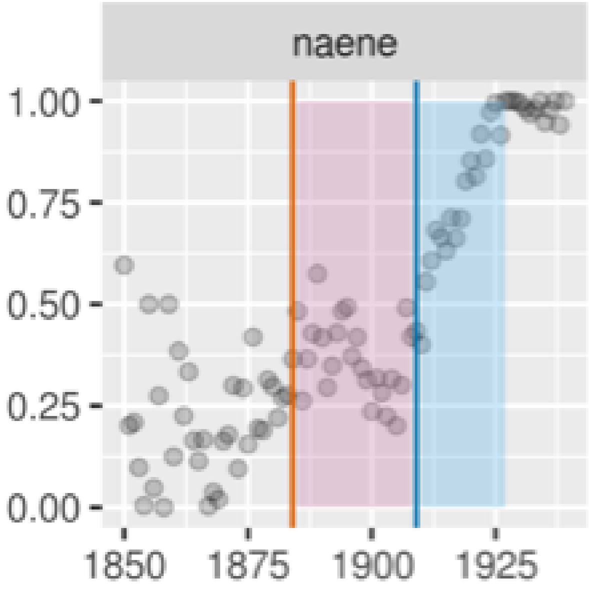
- Significant predictors (logistic regression)
  - Model does not include dialect info



Phase 1		Phase 2	
(n = 170)		(n = 86)	
Trend	↗	Trend	→
Intended	↗	Intended	↘
tradition	↘	tradition	
popsize		**popsize**	↘
edu		edu	
youth	↗	youth	↗

Simple tendencies in data

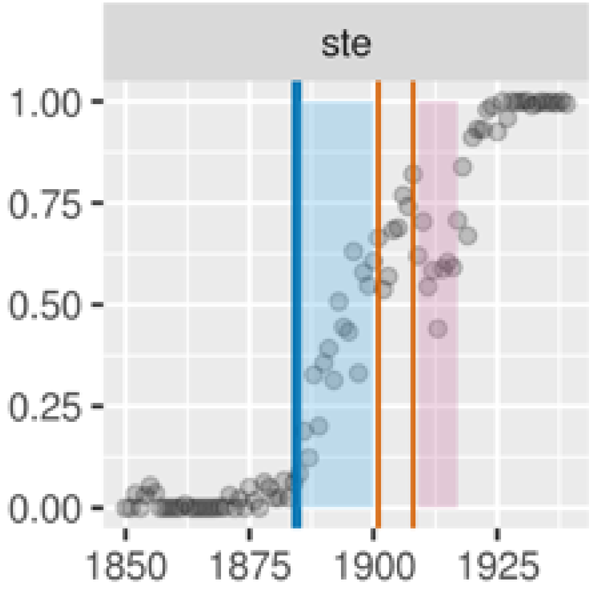
- Significant predictors (logistic regression)
  - Model includes dialect info



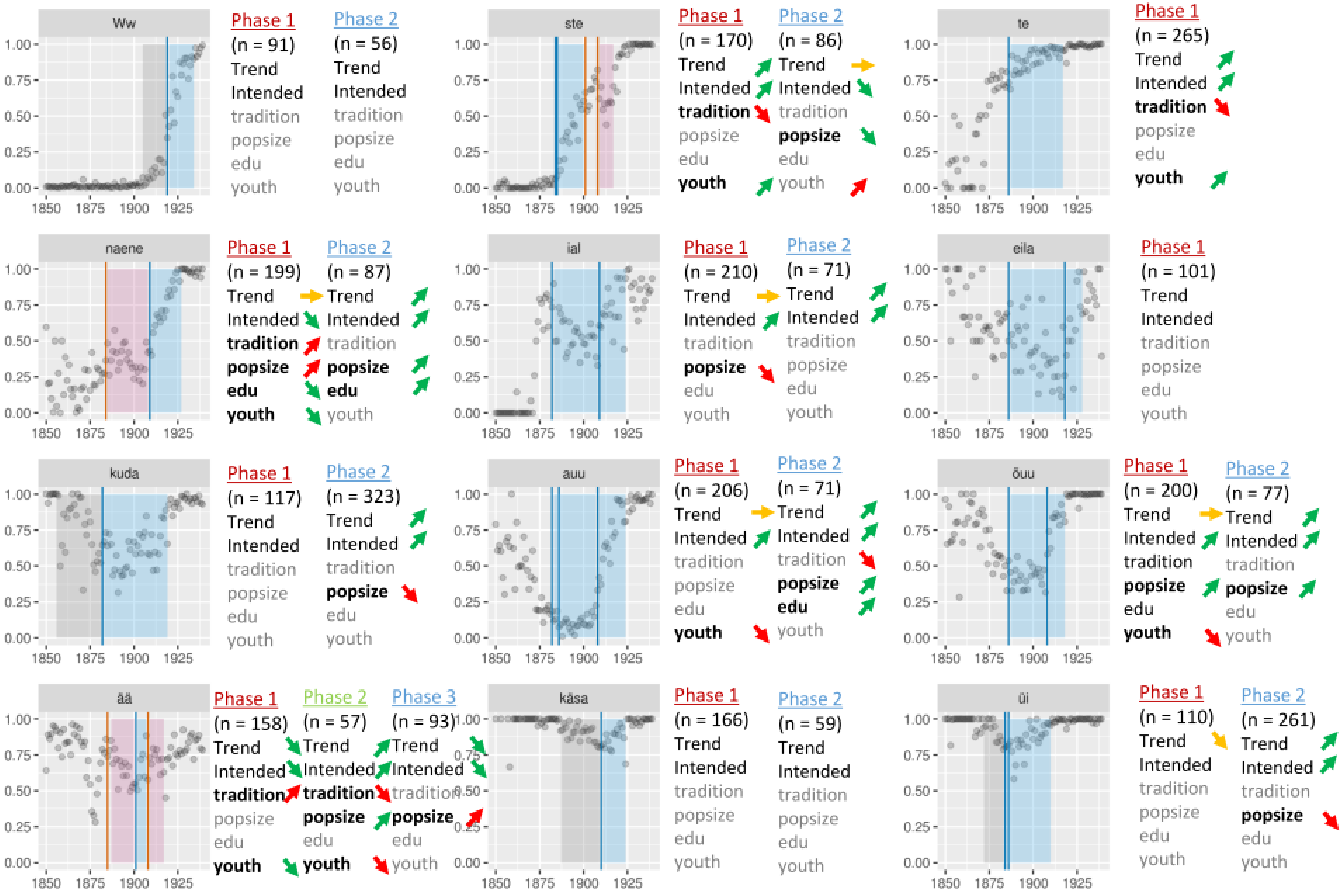
Phase 1 (n = 107)		Phase 2 (n = 35)	
Trend	→	Trend	↗
Intended	↘	Intended	↗
tradition	↗	tradition	
dialect	↗	dialect	
accom	↘	accom	
popsize		**popsize**	↗
edu		**edu**	↗
youth	↘	youth	

Simple tendencies in data

- Significant predictors (logistic regression)
  - Model includes dialect info



Phase 1		Phase 2	
(n = 82)		(n = 44)	
Trend	↗	Trend	→
Intended	↗	Intended	↘
tradition	↘	tradition	
dialect	↘	dialect	
accom		accom	
popsize		**popsize**	↘
edu		edu	
youth	↗	**youth**	↗



Ww

Phase 1
(n = 91)
Trend
Intended
tradition
popsize
edu
youth

Phase 2
(n = 56)
Trend
Intended
tradition
popsize
edu
youth

ste

Phase 1
(n = 170)
Trend ↗
Intended ↗
tradition ↘
popsize
edu
youth ↗

Phase 2
(n = 86)
Trend →
Intended ↘
tradition
popsize ↘
edu
youth ↗

te

Phase 1
(n = 265)
Trend ↗
Intended ↗
tradition ↘
popsize
edu
youth ↗

naene

Phase 1
(n = 199)
Trend →
Intended ↘
tradition ↗
popsize ↗
edu ↘
youth ↘

Phase 2
(n = 87)
Trend ↗
Intended ↗
tradition
popsize ↗
edu ↗
youth

ial

Phase 1
(n = 210)
Trend →
Intended ↗
tradition
popsize ↘
edu
youth

Phase 2
(n = 71)
Trend ↗
Intended ↗
tradition
popsize
edu
youth

eila

Phase 1
(n = 101)
Trend
Intended
tradition
popsize
edu
youth

kuda

Phase 1
(n = 117)
Trend
Intended
tradition
popsize
edu
youth

Phase 2
(n = 323)
Trend ↗
Intended ↗
tradition
popsize ↘
edu
youth

auu

Phase 1
(n = 206)
Trend →
Intended ↗
tradition
popsize
edu
youth ↘

Phase 2
(n = 71)
Trend ↗
Intended ↗
tradition ↘
popsize ↗
edu ↗
youth

õuu

Phase 1
(n = 200)
Trend →
Intended ↗
tradition
popsize ↗
edu
youth ↘

Phase 2
(n = 77)
Trend ↗
Intended ↗
tradition
popsize ↗
edu
youth

ää

Phase 1
(n = 158)
Trend ↘
Intended ↘
tradition ↗
popsize
edu
youth ↘

Phase 2
(n = 57)
Trend ↗
Intended ↗
tradition ↘
popsize ↗
edu
youth ↘

Phase 3
(n = 93)
Trend ↘
Intended ↘
tradition
popsize ↗
edu
youth

käsa

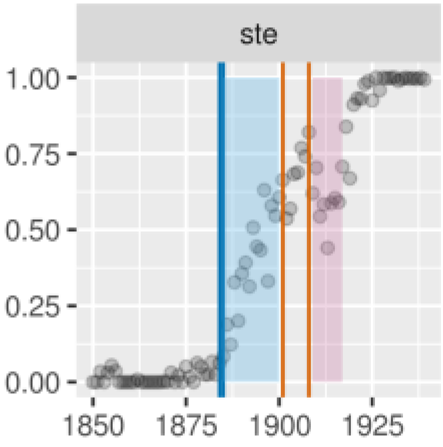
Phase 1
(n = 166)
Trend
Intended
tradition
popsize
edu
youth

Phase 2
(n = 59)
Trend
Intended
tradition
popsize
edu
youth

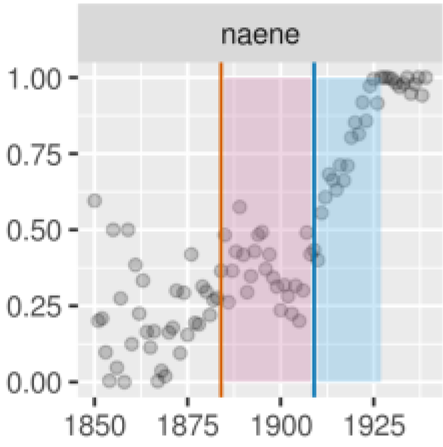
üi

Phase 1
(n = 110)
Trend ↘
Intended
tradition
popsize
edu
youth

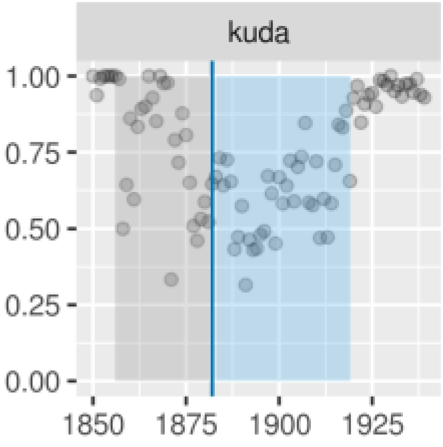
Phase 2
(n = 261)
Trend ↗
Intended ↗
tradition
popsize ↘
edu
youth



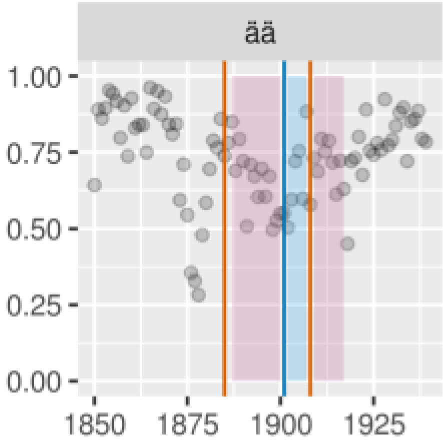
Phase 1		Phase 2	
(n = 82)		(n = 44)	
Trend	↗	Trend	→
Intended	↗	Intended	↘
tradition	↘	tradition	
dialect	↘	dialect	
accom		accom	
popsize		**popsize**	↘
edu		edu	
youth	↗	**youth**	↗



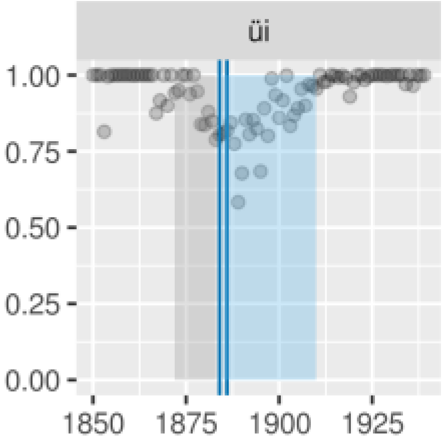
Phase 1		Phase 2	
(n = 107)		(n = 35)	
Trend	→	Trend	↗
Intended	↘	Intended	↗
tradition	↗	tradition	
dialect	↗	dialect	
accom	↘	accom	
popsize		**popsize**	↗
edu		**edu**	↗
youth	↘	youth	



Phase 1		Phase 2	
(n = 59)		(n = 161)	
Trend	↘	Trend	↗
Intended		Intended	↗
tradition		tradition	
dialect		dialect	
accom		accom	
popsize		**popsize**	↘
edu		edu	
youth		youth	



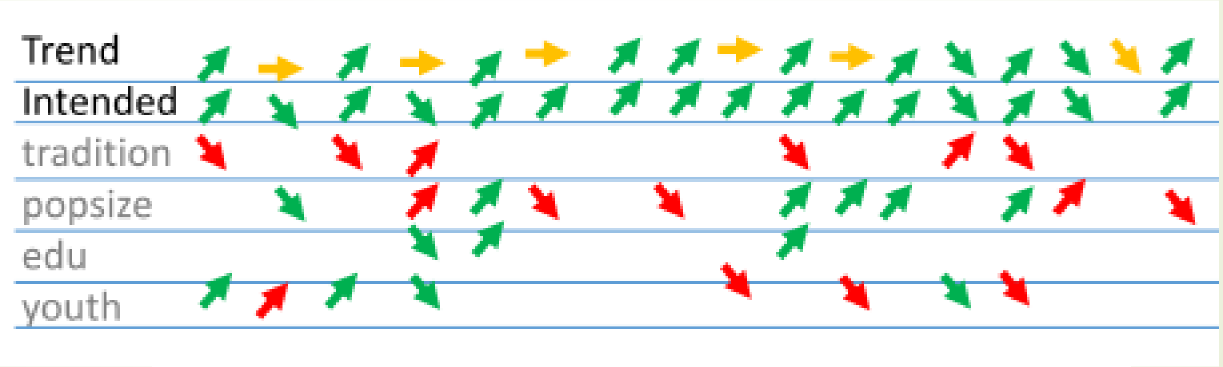
Phase 1		Phase 2		Phase 3	
(n = 77)		(n = 28)		(n = 45)	
Trend	↘	Trend	↗	Trend	↘
Intended	↘	Intended	↗	Intended	↘
tradition	↗	tradition		tradition	
dialect		dialect		dialect	
accom		accom		accom	
popsize		popsize		**popsize**	↗
edu		edu		edu	
youth	↘	youth		**youth**	↘



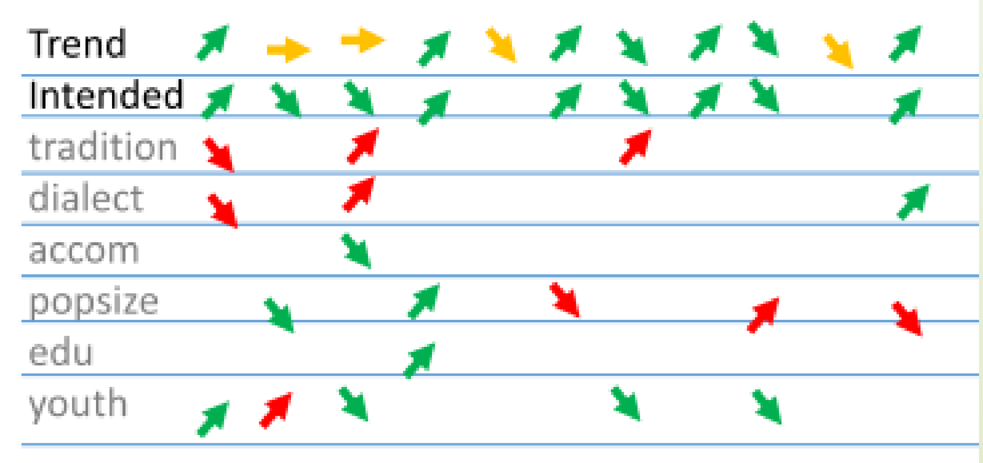
Phase 1		Phase 2	
(n = 49)		(n = 128)	
Trend	↘	Trend	↗
Intended		Intended	↗
tradition		tradition	
dialect		**dialect**	↗
accom		accom	
popsize		**popsize**	↘
edu		edu	
youth		youth	

A basic overview

- Significant factors across all phases
  - Top (no dialect info), bottom (with dialect info)



Trend	↗	→	↗	→	↗	→	↗	↗	→	↗	→	↗	↘	↗	↘	↘	↗
Intended	↗	↘	↗	↘	↗	↗	↗	↗	↗	↗	↗	↗	↘	↗	↘		↗
tradition	↘		↘	↗						↘			↗	↘			
popsize		↘		↗	↗	↘		↘		↗	↗	↗		↗	↗		↘
edu				↘	↗					↗							
youth	↗	↗	↗	↘					↘		↘		↘	↘			



Trend	↗	→	→	↗	↘	↗	↘	↗	↘	↘	↗
Intended	↗	↘	↘	↗		↗	↘	↗	↘		↗
tradition	↘		↗				↗				
dialect	↘		↗								↗
accom			↘								
popsize		↘		↗		↘			↗		↘
edu				↗							
youth	↗	↗	↘				↘		↘		

Study conclusions

- Main hypothesis (late 19c Estonian):
  - Spontaneous changes align with an influx of new authors
  - Prescriptive events line up clearly with trends
  - Some generational influence apparent: successful changes are led by young and large cities.
- Study generally:
  - Data is everywhere and has not been collected
  - Already „first look“ at it can give insights
  - Thinking in terms of data also adds to theory

General discussion

- 80% of DH research is finding the data and getting it ready
  - Manual + technological work
  - Good-enough solutions for current tasks
- Open collections can have a variety of uses
  - Difficult to predict
- Also by-products of research can be useful
  - Databases & processing
  - Visualizations & understanding

Some advice/thoughts

- Start & stay open, document everything!
- Think how your current work fits to the whole project
  - Work with manageable chunks and fit them in right away
- Don’t worry about lack of skills beforehand, but consult specialists!
  - Usually your problems are not new and have solutions.
  - However working with „data“ is new to humanities so you may need to step outside your institute/department.

Interactive plot links

- https://peetertinits.github.io/slides/DH-labs-2019/prese_DH-lab_2019.html#14
- https://peetertinits.github.io/slides/EDHC2018/prese_EDHC_2018.html#45
- https://peetertinits.github.io/slides/EDHC2018/prese_EDHC_2018.html#50
- https://peetertinits.github.io/slides/plots/authorbirths.html
- https://peetertinits.github.io/slides/plots/samamaakond.html