



THESIS SEMINAR MEETING

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June 7, 2021

OUTLINE OF PROGRESS

Data entry from Arabic dataset

Challenges with Turkic dataset

New dataset: Polynesian languages

Index of all language varieties

New GitHub repository

ARABIC DATASET (RATCLIFFE, 2020)

- Recall: semi-manual data entry/cleaning required due to source formatting

1.1 Data

		CA	Mor	Mlt	Cai	Dms	Irq	Skh	AqArb	Cyp	Glif	Ymn	Nig	Bux	Nub
1	ALL	kull	koll	Kollu	kull	kəll	kull	tʃill	kəll, sa:yi:n	kull	kil	kull	tʃat	kullu	kulu
2	ASH	rama:d	rʻmadʻ	rmi:d	rama:dʻ*	rama:d	ruma:d	l	rʻama:d	ramat r-m-d	ramaad	l	l	ra'matt	ruman
3	BAR K	qirfat	qefrʻa	ʔofra	ʔifr*	ʔəfər	gɪfra	kɪfr	səvi:ye	l	gɪfra	gɪfr	li:he, girfe	l	*kokobolatak, (girifa)
4	BEL LY	batʻn	kerʃ	zaʔʔ	batʻn*	batʻən	batʻin	batʻn, tʃarʃ	dʒoof	patnb-tʻ-n	batʻn	batʻn, karʃ	kirʃ	batin	batna
5	BIG	kabi:r	kbi:r	kibi:r	kibii:r	kbi:r	tʃbi:r	tʃabi:r	gəbi:r	k-b-r	ʃood	Kabii:r	kabi:r	ka'biir	kbir
6	BIRD	tʻa:ʔir	tʻir	ʃasfur	tʻeer*	tʻeer	tʻeer	tʻeer	ku:tʃka:ye	2	tʻeer	tʻajr	tʻe:ra	tayra	ter
7	BITE	ʃad	ʃed	gide	ʃadʻ	ʃadʻd	ʃaðʻð	ʃaðʻð	l	ʃaðð	ʃadʻd	lugus	adʻdʻa	yaʃazz	adi

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1.1 Data

		CA	Mor	Mlt	Cai	Dms	Irq	Skh	AqArb	Cyp	Glf	Ymn	Nig	Bux	Nub									
1	ALL	kull	koll	Koll u	kull	kəll	kull	ṯfīl Index	kəll. Gloss	kull	kil CA	kull Mor	ṯfaṯ Mlt	kulla Cai	kulu Dms	Irq	Skh	AqArb	Cyp	Glf	Ymn	Nig	Bux	Nub
2	ASH	ra ma: d	rʿm adˁ	rmi: d	ram a:dˁ *	rama :d	ruma :d	40	HEART		qalb	qelb	?alb	?alb	?alb	qalb	kalʿb	fa:d	kilep	galb	galb	galib	qalb	gelba
								41	HORN		qarn	qerˁn	?arn	?arn	?arən	girin	girin		korne	garn	garn*	garn	ǰx	*gurun
								42	I		?ana:	ana	ji:n	ana	?ana	?a:ni	ana	ana	?-n-a	ana	?ana	ana	anaa	ʾana
								43	KILL		qatala	qtel	?atel	mawwit	?atal	kital	katal	qatal	q-t-l	gital	gatal	katal	qaʿtal	katul
								44	KNEE		rukbat	rokba	rkobba	rukba*	rəkbe	rukba	rʿuṯḃi		rikba	rukbih*	rukuba		*rukuba	
45	KNOW		ʕarafa	ʕrʿef	jaf	ʕirif	ʕəref	ʕiraf	ʕarʿaf	ʕəraf	ʕ-r-f	ʕaraf	diriʕaraf	ʕirif	?araf	ʾarufu								
3	BAR K	qirf at	qeƣ rʽa	ʔoƣr a	ʔifr*	ʔəƣər	giƣra	46	LEAF		waraqat	werqa	werʔa	warʔa*	waraʔa	warga	waraka	waraqa		wriga	waragih*	waraga	varaƣ	korofo
								47	LIE		raqada	ttmed	mtedd	itmaddad*	tlaʔʔah	tmaddad	ttsallas			tamaddad	ragad*	ragad	daaʕa	
								48	LIVER		kabid	kebda	fwi:d	kibda*	kəbəd	kabda			q-sʿ-b	tʃibd	kabdih*	kibde	kabda	*koobda
								49	LONG		tʿawi:l	tʿwil	twil	tʿawi:l	tʿawi:l	tʿuwi:l	tʿawi:l	tʿ-w-l	tʿ-w-l	tʿawiił	tʿawi:l	tʿawil	taʿviil	towil
4	BEL LY	batˁ n	ker ʃ	zaʔʔ	batˁ n*	batˁə n	batˁi n	50	LOUSE		qamlah	qemla	ʔamla	ʔamla*	ʔamle	gamlʿa	kamlˁ		q-m-l	gamlā	gamleh		qamlā	
								51	MAN		radʒul	rʿazəl	radʒəl	rʿa:gil	rəðʒða:l	riðʒða:l	zalami	radʒəl	Intsan	rayyaal	radʒða:l	radʒil	ʾzaaker	ragi
																							raʾzul	
5	BIG	kab i:r	kbi r	kibi r	kibii r	kbi:r	tʃbi:r	52	MANY		kaθi:r	bezzaf	ħafna	kitiir	kti:r	hwa:ja	tʃθi:r	kəti:r	xtir	waadʒid	kaθi:r	kati:r	kaʿsiir	*milan
								53	MEAT		lah̄m	lham	lah̄am	lah̄ma	(lah̄am)	lah̄am	lah̄m	lah̄əm	l-h-m	lah̄am	lah̄m	la:ma	læh̄əm	la:m
6	BIR D	tʿa: ʔir	tʿir	ʕasf ur	tʿee r*	tʿeer	tʿeer	54	MOON		qamar	gamrʿa	ʔamar	ʔamar	ʔamarˁ	gumar	kamarˁ		q-m-r	gamar	gamar	gamar	qamar	*Ja(h)ari
								55	MOUNTAIN		dʒabal	ʒbel	muntanja	gabāl*	dʒabal	dʒibal	tsabal	dʒabal	ʒipel	dʒibal	dʒabal*	hadʒar	dʒabal	dʒebel
								56	MOUTH		fam	fomm	ħalʔ	buʔʔ	təmm	ħaliq	təmm	*xankħ-n-k	ħaldʒ	fumm*	gaddu:ma	bæb	*kasma	
7	BITE	ʕad	ʕed	gide	ʕadˁ	ʕadˁd	ʕaðˁð	57	NAME		ism	smija	isem	ism	ʔəsəm	ʔisim	ism	əsəm	ʔ-s-m	isim	ʔism	isim	ʔisim	*asma
								58	NECK		ʕunq	ʕenq	ʕonʔ	raʔaba*	raʔbe	rugba	rakaba		r-q-b	rguba	rugbeh	ragaba		*ragabtu
								59	NEW		dʒadi:d	ʒdid	dʒdida	gidiid	dʒdi:d	dʒidi:d	tsadi:d	dʒəði:d	ʒtitdʒ-d-d	dʒadiid	dʒadi:d	dʒadi:d	dʒadiid	dʒedid

ARABIC DATASET (RATCLIFFE, 2020)

- Recall: semi-manual data entry/cleaning required due to source formatting

1.1 Data

		CA	Mor	Mlt	Cai	Dms	Irq	Skh	AqArb	Cyp	Glif	Ymn	Nig	Bux	Nub
1	ALL	kull	koll	Koll u	kull	kəll	kull	Index	Gloss	CA	Mor	Mlt	Cai	Dms	Irq
2	ASH	ra ma: d	r ^c m ad ^c	rmi: d	ram a:d ^c *	rama :d	ruma :d	40	HEART	qalb	qelb	?alb	?alb	?alb	qalb
3	BAR K	qirf at	qef r ^c a	?ofr a	?ifr* a	?əfər	gifra	41	HORN	qarn	qer ^c n	?arn	?arn	?arən	giri
4	BEL LY	bat ^c n	ker ʃ	za??	bat ^c n*	bat ^c n	bat ^c i n	42	I	?ana:	ana	ji:n	ana	?ana	?a:ni
5	BIG	kab i:r	kbi r	kibi r	kibii r	kbi:r	tʃbi:r	43	KILL	qatala	qtel	?atel	mawwit	?atal	kital
6	BIR D	t ^c a: ?ir	t ^c ir	?asf ur	t ^c ee r*	t ^c eer	t ^c eer	44	KNEE	rukbat	rokba	rkobba	rukba*	rəkbe	rukba
7	BITE	?ad	?ed	gide	?ad ^c	?ad ^c d	?ad ^c ð	45	KNOW	?arafa	?r ^c ef	jaf	?irif	?əref	?iraf
								46	LEAF	waraqat	werqa	wer?a	war?a*	wara?a	warg
								47	LIE	raqada	ttmed	mtedd	itmaddad*	tla??ah	tmac
								48	LIVER	kabid	kebda	fwi:d	kibda*	kəbəd	kabid
								49	LONG	t ^c awi:l	t ^c wil	twil	t ^c awi:l	t ^c awi:l	t ^c uw
								50	LOUSE	qamlah	qemla	?amla	?amla*	?amle	gaml
								51	MAN	radʒul	r ^c aʒel	radʒel	r ^c a:gil	radʒa:l	ridʒd
								52	MANY	kaθi:r	bezzaf	ħafna	kitiir	kti:r	hwa:
								53	MEAT	lahm	lham	laham	lahma	(laham)	lahar
								54	MOON	qamar	gamr ^c a	?amar	?amar	?amar ^c	gum
								55	MOUNTAIN	dʒabal	ʒbel	muntanja	gabai*	dʒabal	dʒiba
								56	MOUTH	fam	fomm	ħal?	bu??	təmm	ħaliq
								57	NAME	ism	smija	isem	ism	?əsəm	?isim
								58	NECK	?unq	?enq	?on?	ra?aba*	ra?be	rugb
								59	NEW	dʒadi:d	ʒdid	dʒdida	gidiid	dʒdi:d	dʒidi

Cai.txt	
ALL/kull/kull	
ASH/rama:d ^c /rama:d ^c	
BARK/?ifr*/?ifr	
BELLY/bat ^c n*/bat ^c n	
BIG/kibiir/kibi:r	
BIRD/t ^c eer*/t ^c e:r	
BITE /?ad ^c d ^c /?ad ^c d ^c	
BLACK/iswid/iswid	
BLOOD/damm/damm	
BONE/?adma/?adma	
BREAST/sidir*/sidir	
BURN/hara?/hara?	
CLAW/d ^c ifr*/d ^c ifr ^c	
CLOUD/saħaab/saħa:b	
COLD/bard/bard	
COME/ga/ga	
DIE/maat/ma:t	
DOG/kalb/kalb	
DRINK/?irib/?irib	
DRY/na:ʃif*/na:ʃif	
EAR/widn/widn	
EARTH,DIRT/ard ^c /ard ^c	
EAT/akal/akal	
EGG/beed ^c a/be:d ^c a	
EYE/?een/?e:n	
FAT,N./ʃahm/ʃahm	
FEATHER/ri:ʃa*/ri:ʃa	
FIRE/na:r/na:r	
FISH/samak/samak	
FLY/t ^c a:r ^c /t ^c a:r ^c	

ARABIC DATASET (RATCLIFFE, 2020)

- Will likely need to exclude some of the (smaller) varieties from comparison, e.g.
 - Cypriot Arabic
 - Much data missing, most only in form of triconsonantal roots vs. full word forms in other lects
 - Soukhne Arabic (rural Syrian dialect from between Damascus and Baghdad)
 - Cannot find a (unique) Glottolog entry
 - Unclear whether it is a Levantine or Eastern Arabic variety
 - Found ASJP wordlist for “Soukhne Syrian Arabic”, but cross-referenced same as Iraqi Arabic ([https://asjp.clld.org/languages/SOUKHNE SYRIAN ARABIC](https://asjp.clld.org/languages/SOUKHNE_SYRIAN_ARABIC))

TURKIC DATASET: CHALLENGES

- Mostly pre-processed and loaded the Turkic dataset (Savelyev & Robeets, 2020)

	A	B	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	
1	Meaning	Root	Gagauz		KaraKalkpak		KarachayBalka		Karaim		Kazakh		Khakas	
2			Standard roman	IPA	Standard roman	IPA	Standard roman	IPA	Standard roman	IPA	Standard roman	IPA	Standard roman	IPA
3	fire (n.)	*o:t			ot	ot	ot	ot	ot	ot	ot	ot	ot	ot
4		*kaŋ-												
5	nose (n.)	*burUn	burnu	burnu	murin	murun	burun	burun	burun	burun	murin	murun	purun	purun
6		*tumčuk												
7		*bar-			? bar	? bar	bar	bar	bar	bar	bar	bar	par	par
8	go (v.)	*jorī- / *jör(i)-												
9		*kejt-	git	git	? ket	? ket			ket	ket	ket	ket		
10	water (n.)	*sib	su	su	suw	suw	suw	suw	suv	suv	su	su	suγ	suγ
11		*agiŋ	a:z	a:z	awiz	awuz	awuz	awuz	avuz	avuz	awiz	awuz	aas	aas
12	mouth (n.)	*aŋak												
13		*jü:f												
14	tongue (n.)	*til	dil	dil	til	til	til	til	til	til	til	təl	təl	təl
15	blood (n.)	*kia:n	kan	kan	қан	qan	қан	qan	kan, (k) қan	kan, (k) qan	қан	qan	қан	қан
16		*siŋök			süyek	syjek	süyek	syjek	sivek, (k) süyek	sivek, (k) syjek	süyek	syjek	söök	söök
17	bone (n.)	*kemük	kemik	kemik										
18		*se												
19	2SG pronoun	*sen	sän	sen	sen	sen	sen	sen	sen	sen	sen	sen	sin	sin
20		*tamor			tamir	tamur	tamir	tamur	tamur	tamur	tamir	tamur		
21		*jildir												
22		*taril = *tasil												
23	root (n.)	*kök	kök	kök										
24		*tüp												
25		*öf												
26	come (v.)	*gel	gel	gel	kel	kel	kel	kel	kel	kel	kel	kel	kil	kil
27		*köküR(ek)	gü:s	gy:s	kökürek	kökyrek	kökürek	kökyrek	kökräk, kekrek, k	kökrek, kekrek, k	kökrek	kökrek	kögäs, köksə	kögäs,
28	breast (n.) //	*tiö:í			? tös	? tös	töš	töf	töš, tes	töf, tes	tös	tös		
29	(chest) (n.)	*kebde			gewde	gewde					kewde	kewde		
30		*jag-	ya:mur	ja:mur	žawin, (žamyir)	zawun, (žamyur)	janur, (Balk.) jaw	džanur, (Balk.) dž	yamyur	jamγur	žanbir, žawin	žanbur, zawun	naγmir	naγmu

TURKIC DATASET: CHALLENGES

- Possible issues with some of the IPA transcriptions
 - Orthographic symbols sometimes used in place of IPA characters
 - Possible to replace wherever clear what the intended IPA symbols were
e.g. <š> = /ʃ/, <ʱ> = /ɰ/, or Chuvash <ö> = /əʷ/
...but some are less clear, and resources may not exist to disambiguate.
- Turkish transcriptions call into question the validity/quality of transcriptions
 - Transcribes phonemes which do not exist in standard Turkish, e.g. /q/, /ɣ/
 - Some words are mistaken: e.g. **üştüde* /ɣʃtynde/ ‘above’
 - → Maybe some non-standard dialect of Turkish?
 - Could correct the issues in Turkish, but I don’t know enough about other varieties to check/correct them
- Annotations within transcriptions: need to spend more time to sort these out

TURKIC DATASET: CHALLENGES

- Could alternatively use a different dataset for Turkic:
 - **NorthEuraLex**
 - Only includes 8 Turkic languages
 - Turkish, Azeri, Uzbek, Kazakh, Bashkir, Tatar, Sakha, Chuvash
 - **“Culture Words for Turkic”** from Diachronic Atlas of Comparative Linguistics (DiACL)
 - Only includes 9 Turkic languages
 - Turkish, Gagauz, Turkmen, Azeri, Crimean Tatar, Kazakh, Kumyk, Tuvan, Southern Altai
 - Not a Swadesh list
- ... vs. 31 Turkic languages in Savelyev & Roberts (2020) dataset, which also includes cognate coding.
 - would strongly prefer to find solution with this dataset

POLYNESIAN DATASET (WALWORTH, 2018)

- One final dataset including 30 modern Polynesian languages + Proto-Polynesian reconstructed forms
- Source is well formatted/machine readable, no issues in IPA transcriptions, includes Glottolog and ISO references, cognate coding
- No major issues found → fully preprocessed

OVERVIEW OF DATASETS

Family	Source Name	Reference	Number of Varieties
Arabic	Glottometrics of Arabic	Ratcliffe (2020)	14
Italic	Global Lexicostatistic Database	Saenko (2016)	58
(Balto-)Slavic	NorthEuraLex	Dellert et al. (2019)	9 (+2 Baltic)
Uralic	NorthEuraLex	Dellert et al. (2019)	26
Polynesian	Polynesian Segmented Data	Walworth (2018)	31
Sinitic	Collection of basic vocabulary words and characteristic dialect words in modern Chinese dialects	Líu et al. (2007)	19
Turkic	Basic vocabulary datasets for the Turkic languages	Savelyev & Robbeets (2020)	31

INDEX OF LANGUAGE VARIETIES

- Cross-referenced all varieties from datasets with Glottolog and ISO codes in order to be able to compare results with gold standard trees
- Some varieties could not be found → exclude from study (e.g. specific Italic dialects)

1	Dataset	Family	Name	Source Name	Glottolog Name	Glottocode	ISO 639-3	ISO 639-3 Name	Reference	Notes
171	NorthEuraLex	Uralic, Finnic	Estonian	Estonian	Estonian	esto1258	ekk	Standard Estonian	Dellert et al., 2019	
172	NorthEuraLex	Uralic, Finnic	Finnish	Finnish	Finnish	finn1318	fin	Finnish	Dellert et al., 2019	
173	NorthEuraLex	Uralic, Finnic	Livonian	Livonian	Liv	liw1244	liv	Liv	Dellert et al., 2019	
174	NorthEuraLex	Uralic, Finnic	North Karelian	North Karelian	Karelian	kare1335	krl	Karelian	Dellert et al., 2019	
175	NorthEuraLex	Uralic, Finnic	Olonets Karelian	Olonets Karelian	Liwi	liw1243	olo	Liwi	Dellert et al., 2019	
176	NorthEuraLex	Uralic, Finnic	Veps	Veps	Veps	veps1250	vep	Veps	Dellert et al., 2019	
177	NorthEuraLex	Uralic, Hungarian	Hungarian	Hungarian	Hungarian	hung1274	hun	Hungarian	Dellert et al., 2019	
178	NorthEuraLex	Uralic, Khantyic	Northern Khanty	Northern Khanty	Kazym-Berezover-Suryskarer Khanty	khan1273	kca	Khanty	Dellert et al., 2019	
179	NorthEuraLex	Uralic, Mansic	Northern Mansi	Northern Mansi	Northern Mansi	mans1258	mns	Mansi	Dellert et al., 2019	
180	NorthEuraLex	Uralic, Mari	Hill Mari	Hill Mari	Western Mari	west2392	mrj	Western Mari	Dellert et al., 2019	
181	NorthEuraLex	Uralic, Mari	Meadow Mari	Meadow Mari	Eastern Mari	east2328	mhr	Eastern Mari	Dellert et al., 2019	
182	NorthEuraLex	Uralic, Mordvin	Erzya	Erzya	Erzya	erzy1239	myv	Erzya	Dellert et al., 2019	
183	NorthEuraLex	Uralic, Mordvin	Moksha	Moksha	Moksha	moks1248	mdf	Moksha	Dellert et al., 2019	
184	NorthEuraLex	Uralic, Permian	Komi-Permyak	Komi-Permyak	Komi-Permyak	komi1269	koi	Komi-Permyak	Dellert et al., 2019	
185	NorthEuraLex	Uralic, Permian	Komi-Zyrian	Komi-Zyrian	Komi-Zyrian	komi1268	kpv	Komi-Zyrian	Dellert et al., 2019	
186	NorthEuraLex	Uralic, Permian	Udmurt	Udmurt	Udmurt	udmu1245	udm	Udmurt	Dellert et al., 2019	
187	NorthEuraLex	Uralic, Saami	Inari Sami	Inari Sami	Inari Saami	inar1241	smn	Inari Sami	Dellert et al., 2019	
188	NorthEuraLex	Uralic, Saami	Kildin Sami	Kildin Sami	Kildin Saami	kild1236	sjd	Kildin Sami	Dellert et al., 2019	
189	NorthEuraLex	Uralic, Saami	Lule Sami	Lule Sami	Lule Saami	lule1254	smj	Lule Sami	Dellert et al., 2019	
190	NorthEuraLex	Uralic, Saami	Northern Sami	Northern Sami	North Saami	nort2671	sme	Northern Sami	Dellert et al., 2019	
191	NorthEuraLex	Uralic, Saami	Skolt Sami	Skolt Sami	Skolt Saami	skol1241	sms	Skolt Sami	Dellert et al., 2019	
192	NorthEuraLex	Uralic, Saami	Southern Sami	Southern Sami	South Saami	sout2674	sma	Southern Sami	Dellert et al., 2019	
193	NorthEuraLex	Uralic, Samoyedic	Forest Enets	Forest Enets	Forest Enets	fore1265	enf	Forest Enets	Dellert et al., 2019	
194	NorthEuraLex	Uralic, Samoyedic	Nganasan	Nganasan	Nganasan	ngan1291	nio	Nganasan	Dellert et al., 2019	
195	NorthEuraLex	Uralic, Samoyedic	Northern Selkup	Northern Selkup	Selkup	selk1253	sel	Selkup	Dellert et al., 2019	
196	NorthEuraLex	Uralic, Samoyedic	Tundra Nenets	Tundra Nenets	Tundra Nenets	nene1249	yrk	Nenets	Dellert et al., 2019	
197	NorthEuraLex	Yeniseian, Northern Yeniseian	Ket	Ket	Ket	kett1243	ket	Ket	Dellert et al., 2019	
198	NorthEuraLex	Yukaghir, Kolymic	Southern Yukaghir	Southern Yukaghir	Southern Yukaghir	sout2750	yux	Southern Yukaghir	Dellert et al., 2019	
199	NorthEuraLex	Yukaghir, Northern Yukaghir	Northern Yukaghir	Northern Yukaghir	Northern Yukaghir	nort2745	ykg	Northern Yukaghir	Dellert et al., 2019	
200	Polynesian	Austronesian, Polynesian	Proto-Polynesian	Polynesian	Polynesian	poly1242			Walworth, 2018	
201	Polynesian	Austronesian, Polynesian, Anuta	Anuta	Anuta	Anuta	anut1237	aud	Anuta	Walworth, 2018	
202	Polynesian	Austronesian, Polynesian, Carolinean Outlier Polynesian	Kapingamarangi	Kapingamarangi	Kapingamarangi	kapi1249	kpg	Kapingamarangi	Walworth, 2018	
203	Polynesian	Austronesian, Polynesian, East Futuna	East Futuna	East Futuna	East Futuna	east2447	fud	East Futuna	Walworth, 2018	
204	Polynesian	Austronesian, Polynesian, East Polynesian	Austral A	AustralA	Austral	aust1304	aut	Austral	Walworth, 2018	
205	Polynesian	Austronesian, Polynesian, East Polynesian	Austral B	AustralB	Austral	aust1304	aut	Austral	Walworth, 2018	

NEW GITHUB REPOSITORY

- Created new GitHub repository under my personal account: pgeorgis/LST_MScThesis
- Currently private, but I can grant access
- Will use to store update presentations, processed data, future scripts, etc.

master LST_MScThesis / Resources / Data / Processed Data /

pgeorgis Updated languages

..

Arabic	First commit
Hokan	First commit
Italic	First commit
NorthEuraLex	First commit
Polynesian	First commit
Sinitic	First commit
Turkic	First commit

Languages.tsv	Updated languages
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NEXT STEPS

