Historical Interactions among Turkic Groups

Inferred through Constraint-based Linguistic Typology

Jonathan North Washington
jonwashi@indiana.edu

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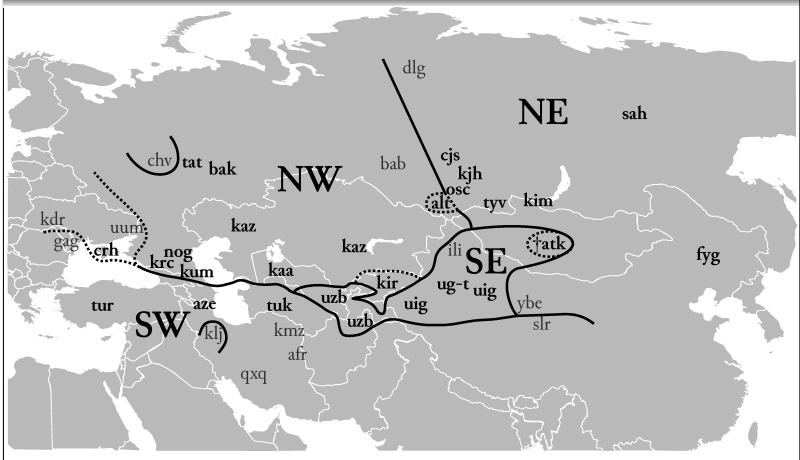
The problem

c.f. Johanson (2006)

- Internal classification of Turkic languages is problematic
- Based on:
  - Tracing evolution of sound changes via individ. lexemes:
    (1) ***hadaq** 'foot' → ataq, azaχ, ayaq, etc.
    (2) ***tağ** 'mountain' → tıa, daχ, dā, taw, tō, etc.
  - Knowledge of the socio-political history of Turkic peoples
- Issues that arise:
  - Dialect continua (Turkish-Azeri)
  - Merging of dialects/languages (Uzbek)
  - (+Cross-dialectal/lingual borrowing)
  - Apparent membership to different groups (Altay & Kyrgyz)
- Causes: convergence (vs. divergence), national borders
- Result: lack of concensus on many issues of classification



Optimality Theory (OT) - A Theory of Phonology

The basic principles

- One input form (stored in brain)
- Many possible output forms (infinite) generated by system
- "Constraints" limit output forms
  - Faithfulness constraints: "be like input form"
  - Markedness constraints: "don't break universal principles"
- All constraints may be violated
- Constraints are ranked
- One "optimal" output form is selected (what you say)
- Chosen based on not violating higher-ranked constraints

Example Constraints

c.f. Baertsch and Davis (2001), Baertsch and Davis (2004)

- ICC[X] — Identical Cluster Constraint
  - Two adjacent consonants must be identical in feature X
- SyllCon — Syllable Contact Law (SCL)
  - Don't allow rising sonority across syllable boundaries
- SCS — Syllable Contact Slope (version of SCL)
  - Have falling sonority across syllable boundaries
- FaithOnset ≫ FaithCoda — Faithful Onset/Coda (general)
  - Consonants in syllable onsets/codas should remain faithful
- FaithStem ≫ FaithAffix — Faithful Stem/Affix (general)
  - Sounds in a word's stem/affix should remain faithful
- ID[X] — Featural Identity
  - Feature X of a segment must not change in valence

Example Problem

Crimean Tatar

- In Crimean Tatar (spoken language), /n+l/ → [n.n]:
  (3) **kün** 'day' + **LAr** 'pl.' → [**künner**]
- One [of many] explanatory rankings:
  (4) ID[son], ICC[nas] ≫ SyllCon, SCS, ICC[lat] ≫ FaithStem ≫ FaithOnset

/n+l/	ID [son]	ICC [nas]	Syll Con	SCS	ICC [lat]	Faith Stem	Faith Onset
☞ a. [n.n]			*				*
b. [l.l]			*			*!	
c. [n.l]		*!	*	*	*		
d. [n.d]	*!	*					*

Typology

- Different ranking per language
- Minute differences in ranking shown minute differences in systems
  (5) For example:

	V	y/w	r	l	m/n/ŋ	z(etc)	s(etc)
Tatar	V.lAr	y.lAr	r.lAr	l.lAr	n.nAr	z.lAr	s.lAr
Kumyk	V.lAr	y.lAr	r.lAr	l.lAr	l.lAr	z.lAr	s.lAr

  (6) Tatar: ICC[nas] ≫ ICC[lat] ≫ ID[nas], ID[lat]
  (7) Kumyk: ICC[lat] ≫ ICC[nas] ≫ ID[nas], ID[lat]

Typology

Historical Implications

- A language's grammar (phonology) = a constraint ranking
- Assumption: small differences in the grammar of related languages says something about the relation of related languages to one another
- Reasons?
  - *Model 1*: grammar acquired by children, remains fixed
    - Accounts for historical language divergence
  - *Model 2*: grammar remains flexible throughout life, influenced by social pressures, bilingualism, etc.
    - Accounts for convergence phenomena, e.g. Sprachbunds
- Harmony of both models accounts for most phenomena

Turkic Plural Morphemes

Variation in forms

- Uzbek: -lar
- Turkish: -lar, -ler
- Tatar: -lar, -lär, -nar, -när
- Khakas: -lar, -ler, -nar, -ner, -tar, -ter
- Kazakh: -lar, -ler, -dar, -der, -tar, -ter
- Tuvan: -lar, -ler, -nar, -ner, -dar, -der, -tar, -ter
- Kyrgyz:
  -lar, -ler, -lor, -lör, -dar, -der, -dor, -dör, -tar, -ter, -tor, -tör
- Sakha:
  -lar, -ler, -lor, -lör, -nar, -ner, -nor, -nör, -dar, -der, -dor, -dör, -tar, -ter, -tor, -tör

Identifying patterns

Turkic morphemes in –/l/

	V	y/w	r	l	m/n/ŋ	z(etc)	s(etc)
Uzbek, etc.	V.l	y.l	r.l	l.l	n.l	z.l	s.l
Tatar	V.l	y.l	r.l	l.l	n.n	z.l	s.l
Kumyk	V.l	y.l	r.l	l.l	l.l	z.l	s.l
Turkish	V.l	y.l	l.l	l.l	l.l	z.l	s.l
Azeri	V.l	y.l	l.l	l.l	n.n	z.l	s.l
Khakas	V.l	y.l	r.l	l.l	n.n	—	s.t
Tuvan	V.l	y.l	r.l	l.d	n.n	—	s.t
Kazakh	V.l	y.l	r.l	l.d	n.d	z.d	s.t
Kyrgyz	V.l	y.l	r.d/r.l	l.d	n.d	z.d	s.t
Sakha	V.l	y.d	r.d	l.l	n.n	—	s.t
Bashqort	V.l	y.ð	r.ð	l.d	n.d	ð.ð	s.t

Identifying patterns

Turkic morphemes in –/n/

	V	y/w	r	l	m/n/ŋ	z(etc)	s(etc)
Uzbek	V.n	y.n	r.n	l.n	n.n	z.n	s.n
Khakas	V.n	y.n	r.n	l.n	n.n	—	s.t
Tuvan	V.n	y.n	r.n	l.d	n.n	—	s.t
Shor	V.n	y.d	r.d	l.d	n.n	—	s.t
Kazakh, etc.	V.n	y.d	r.d	l.d	n.d	z.d	s.t
Bashqort	V.n	y.ð	r.ð	l.d	n.d	ð.ð	s.t
Sakha	V.n	y.	r.	l.	n.	—	s.
Turkish, etc.	V.n	y.	r.	l.	n.	z.	s.

Identifying patterns

Nasal recovery (Eulenberg (1996), Davis (1998))

(8) "Nasal Recovery" in Kazakh, examples:

	-D		-N		-M	
	-DA	-DAn	-NI	-NIŋ	MA, -MA	-MIn, -Men(en)
n	[tʉn–**di̯ə**] at night	[tʉn–**ni̯ən**] night (ABL)	[kʉn–**də**] day (ACC)	[kʉn–**nən**] day (GEN)	[ʒi̯ə–gi̯ən **bi̯ə**]? has s/he eaten?	[ʒi̯ə–gi̯ən–**mən**] I've eaten
m	[si̯əzəm–**di̯ə**] feeling DAT	[si̯əzəm–**ni̯ən**] feeling (ABL)	[kəm–**də**] whom	[kəm–**nən**] whose	[si̯əzəm **bi̯ə**]? feeling?	[si̯əzəm–**mi̯ən**] with feeling
ŋ	[tɑŋ–**dɑ**] at dawn	[tɑŋ–**nɑn**] dawn (ABL)	[tɑŋ–**dɯ**] dawn (ACC)	[tɑŋ–**nɯn**] dawn (GEN)	[tɑŋ **bɑ**]? dawn?	[tɑŋ–**mi̯ən**] dawn (INSTR)

Identifying patterns

Nasal recovery

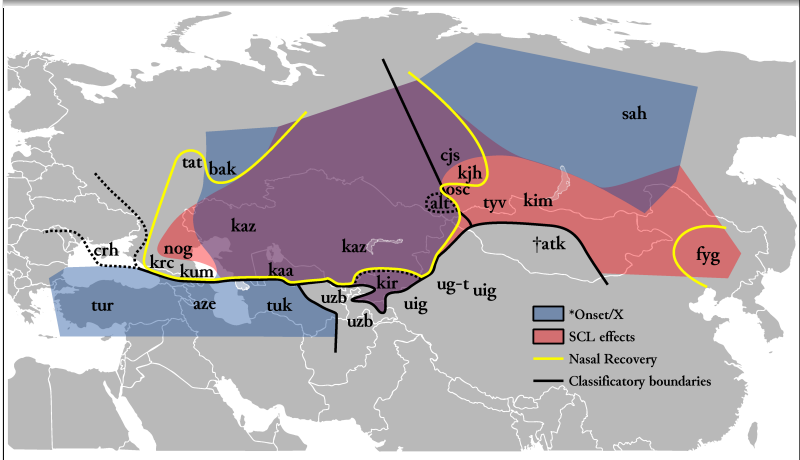
(9) "Nasal Recovery" in Kazakh, complete paradigm:

	V	y/w	r	l	m/n/ŋ	z(etc)	s(etc)
-d	V.d	y.d	r.d	l.d	n.d	z.d	s.t
-dVn	V.dVn	y.dVn	r.dVn	l.dVn	n.nVn	z.dVn	s.tVn
-n	V.n	y.d	r.d	l.d	n.d	z.d	s.t
-nVn	V.nVn	y.dVn	r.dVn	l.dVn	n.nVn	z.dVn	s.tVn
-m	V.m	y.m	r.m	l.m	n.b	z.b	s.p
-mVn	V.mVn	y.mVn	r.mVn	l.mVn	n.mVn	z.bVn	s.pVn

Tracking the data

What's being looked at

- Syllable Contact Law effects
  - Desonorisation after segment of [equal or] lower sonority
  - E.g., /**y+l**/ → [**y.l**], but /**l+l**/ → [**l+d**] (Kazakh, etc.)
- *Onset/X constraints
  - "Don't begin a syllable with X"
  - X reflects the sonority scale, universally ranked
  - Best onsets: S ≫ Z ≫ N ≫ L ≫ R ≫ J
  - Constraint series: *Onset/J ≫ *Onset/R ≫ *Onset/L ≫ *Onset/N ≫ *Onset/Z ≫ *Onset/S
  - E.g., /**V+l**/ → [**Vl.**], but /**y+l**/ → [**y.d**] (Sakha)
- Nasal Recovery
  - (Basically,) /N.CVN/ → [N.NVN]
  - E.g., /**n.d**/ → [**n.d**], but /**n.dan**/ → [**n.nan**] (Kazakh, etc.)



Analysis

The trends and what they mean

- Explanation:
  - *Model 1*: Related languistic varieties developed similar patterns independently after having diverged from one another
  - ***Model 2***: Features spread geographically due to prolongued contact
  - *Evidence*: Lack of historical evidence for development of systems before divergence of languages.
- Conclusions:
  - Spread of linguistic patterns by geography
  - *Onset/X, SCL, Nasal Recovery: indepent, but similar
  - Do not follow "established" classificatory divisions
  - Implies prolonged contact after divergene (= convergence)
  - Possible to determine origin and direction of spread?

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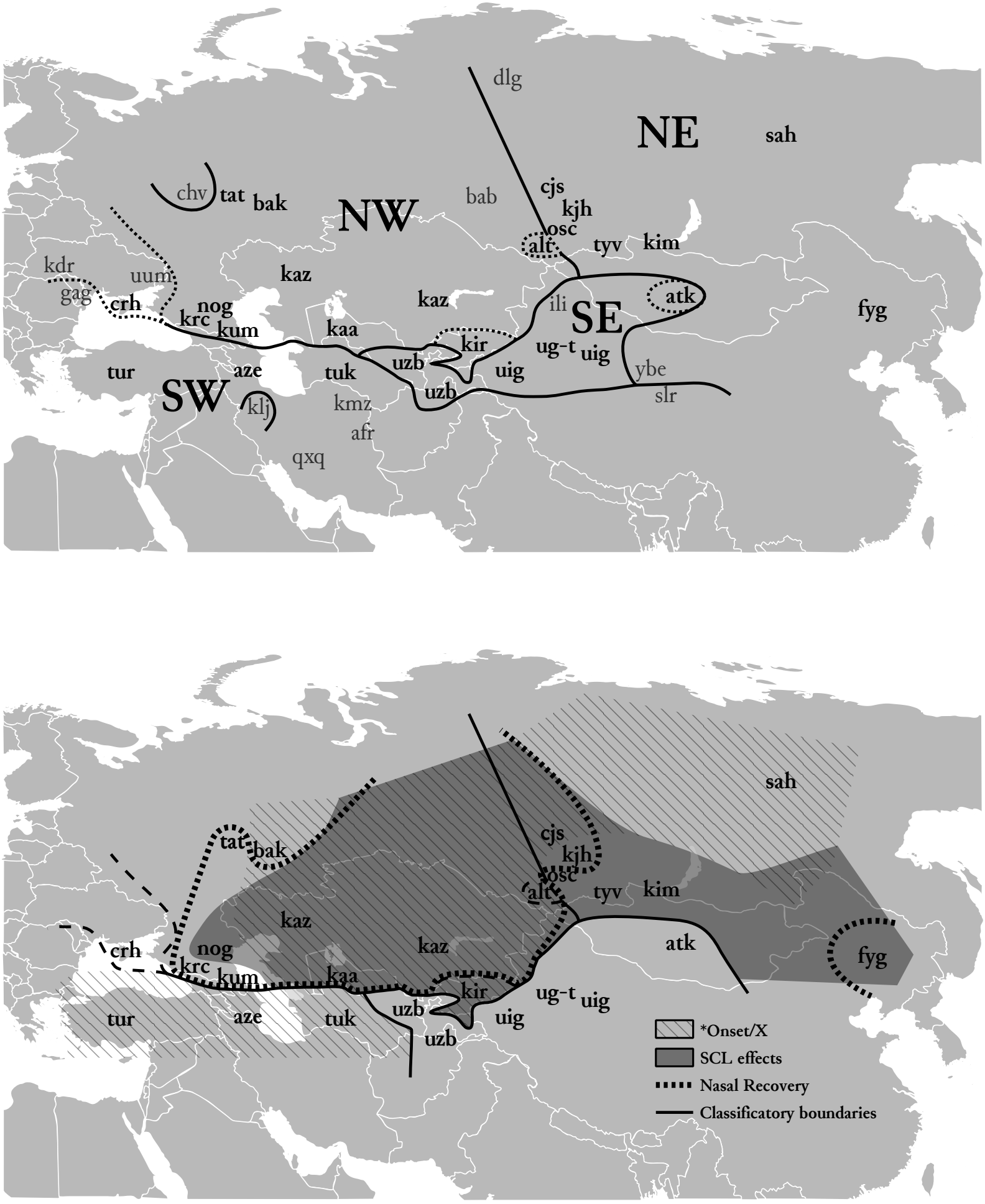
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*Onset/X
SCL effects
Nasal Recovery
Classificatory boundaries