Pomoan Stress: Change, Contact, and Reanalysis

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Miniconference on Metrical Structure: Acquisition and Processing

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Outline of talk

• stress markedness
  – what theories seem to predict about change
• Pomoan stress
  – reconstruction of proto stress
  – synchronic patterns
• changes that have occurred
  – generalizations and analysis
• adjacent languages
  – likely contact influences on reanalysis
• implications for learning
  – responses to ambiguous generalizations
  – factors and biases in reanalysis
Metrical typology

• cross-linguistic stress patterns
  – what is common, rare, and unattested
  – next question is what the theory should say about this

• some conceivable patterns are surely impossible
  – default stress on the fourth syllable, or pre-antepenult
  – primary stress on middle syllable of any word
  – stresses on 2nd, 3rd, 5th, 8th syllables

• a theory that predicts any such system is dubious
  – so there are some patterns that should be excluded
  – are they formally impossible to represent?
What is markedness?

• some theories exclude certain more plausible patterns
  – left-edge extrametricality
  – quantity-insensitive iamb

• even if permitted, they are still typologically uncommon
  – what does this imply about their formal status?
  – are they possible to represent, but somehow more complex?
  – is there a learning bias against them?

• diachronic change as a window into acquisition
  – overall trajectory reflects what is learned each generation
  – if uncommon patterns persist,
  – can they really be “marked” to the learner?
Pomoan family

• seven languages in northern California
  – time depth compared to Germanic
• presents useful testing ground
  – proto-stress pattern is somewhat unusual
  – stress on second syllable regardless of weight
  – though does not move beyond the root
• variety of changes in descendents
  – maintained (nearly) intact in several
  – more significantly modified in others
  – radically changed in one of them
• what happened during language transmission?
  – what does this tell us about learning stress patterns?
Pomoan in the world
Language families of California

INDIGENOUS LANGUAGE FAMILIES

- **Algc**
  - Wiyot
  - Yurok
- **Athabaskan**
  - Bear River–Mattole
  - Chetco–Tolowa
  - Eel River
  - Hupa
  - Kato
- **Chumashan**
  - Barbareño
  - Ineseño
  - Interior Chumash
  - Island Chumash
  - Obispeño
  - Purisimeño
  - Ventureño
- **Hokan**
  - Chimariko
  - Esselen
  - Karuk
  - Palaihnihan languages
  - Pomoan languages
  - Salinan
  - Shastan languages
  - Washo
  - Yana
  - Yuman languages
- **Penutian**
  - Klamath–Modoc
  - Maiduan languages
  - Miwokan languages
  - Ohlone languages
  - Wintuan languages
  - Yokutsan languages
- **Uto-Aztecan**
  - Numic languages
  - Takic languages
  - Tübatulabal
- **Yuki–Wappo**
  - Coast Yukian
  - Northern Yukian
  - Wappo
Pomoan languages

- Northern
- Eastern
- Southeastern
- Central
- Southern
- Kashaya
- California
Internal relationships

Proto-Pomo

Western Branch

Southern Group

Kashaya  Southern  Central  Northern  Northeastern  Eastern  Southeastern
• reconstructed by McLendon (1973)
  – I’ll mainly accept her assumptions
  – but will make certain minor changes unrelated to stress
• proto-language probably located around territory of E and SE languages
  – Clear Lake region
• phased movements
Evidence for proto-stress

• actual location of stress in modern languages
  – N, E, SE, C are relatively consistent
  – NE also lends some support
  – K and especially S are now quite different

• aphesis of initial unstressed syllables
  – complete loss with initial /ʔ, h/
  – pervasive in all languages except K, S, sometimes NE
  – even K, S have it to a more limited degree

• vowel deletion in initial unstressed syllables
  – retention of non-laryngeal onset consonant
  – common in C, pervasive in SE

• syncope in post-tonic syllables
  – precedes change in K, S stress patterns
Stress on second syllable

<table>
<thead>
<tr>
<th></th>
<th>‘duck’</th>
<th>‘bear’</th>
<th>‘woman’</th>
<th>‘angelica’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>q’ajál</td>
<td>buṭaqá</td>
<td>?ima:ta’</td>
<td>baʔtʃ’owá</td>
</tr>
<tr>
<td>S</td>
<td>k’á:jan</td>
<td>bu:ṭáka</td>
<td></td>
<td>baʔtʃ’ówha</td>
</tr>
<tr>
<td>C</td>
<td>k’já:n</td>
<td>p’ṭáka</td>
<td>má:ta</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>k’aján</td>
<td>bitá:</td>
<td>má:ta</td>
<td>batʃ’ówa</td>
</tr>
<tr>
<td>NE</td>
<td>k’ajá:-</td>
<td>bóro-</td>
<td>himá:ta</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>q’a:já:n</td>
<td>bu:ráqal</td>
<td>má:- archaic</td>
<td>ba:k’ó:</td>
</tr>
<tr>
<td>SE</td>
<td>k’ján</td>
<td>bṭéqal</td>
<td></td>
<td>ʔk’ó-b</td>
</tr>
<tr>
<td>PP</td>
<td>*q’a:ján</td>
<td>*bu:ṭáqa(l)</td>
<td>*ʔimá:ta</td>
<td>*baʔk’ówa</td>
</tr>
</tbody>
</table>

excluding K, S, sometimes NE: the languages show stress on second syllable
## Loss of first syllable

<table>
<thead>
<tr>
<th></th>
<th>‘eye, face’</th>
<th>‘fat’</th>
<th>‘fire’</th>
<th>‘water’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>huʔúj</td>
<td>¿ihpʰúj</td>
<td>¿oho’</td>
<td>¿ahqʰa’</td>
</tr>
<tr>
<td>S</td>
<td>húʔúj</td>
<td>¿ihpʰúj</td>
<td>¿óh:o</td>
<td>¿áhkʰa</td>
</tr>
<tr>
<td>C</td>
<td>¿új</td>
<td>pʰúj</td>
<td>hó</td>
<td>kʰá</td>
</tr>
<tr>
<td>N</td>
<td>¿új</td>
<td>pʰúj</td>
<td>hó</td>
<td>kʰá</td>
</tr>
<tr>
<td>NE</td>
<td>¿új</td>
<td>fíː</td>
<td>¿óho</td>
<td>kʰá</td>
</tr>
<tr>
<td>E</td>
<td>¿új</td>
<td>pʰúj</td>
<td>xó</td>
<td>xá</td>
</tr>
<tr>
<td>SE</td>
<td>¿új</td>
<td>fúj</td>
<td>χó</td>
<td>χá</td>
</tr>
<tr>
<td>PP</td>
<td>*huʔúj</td>
<td>*¿ihpʰúj</td>
<td>*¿ohχó</td>
<td>*¿ahqʰá</td>
</tr>
</tbody>
</table>

*Initial syllable must have been unstressed – therefore 2nd syllable was stressed*
Pomoan instrumental prefixes

- around 20 prefixes of the shape CV
  - express manner, cause, or object of action
    *bi- ‘by collecting, by encircling, by sewing’
    *pʰu- ‘by blowing, by floating in the air’
    *qa- ‘between two forces, by biting’
- overwhelmingly common in verbs
  - K dictionary contains 4220 verb stems
  - of these, 3750 (or 89%) are prefixed
  - also in nouns derived from such verbs
- here the root is the second syllable of the word
  - stress aligned with left edge of root: σ{σσ
  - location can be expressed by reference to morphology
### Prefixed verbs

<table>
<thead>
<tr>
<th></th>
<th>‘bite’</th>
<th>‘carry’</th>
<th>‘fly, float’</th>
<th>‘smell, stink’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>qane-</td>
<td>biʔdi-</td>
<td>pʰudi-</td>
<td>mihʃe-</td>
</tr>
<tr>
<td>S</td>
<td>ka:ne-</td>
<td>biʔdi-</td>
<td></td>
<td>mehʃe-</td>
</tr>
<tr>
<td>C</td>
<td>ka:né-</td>
<td></td>
<td>pʰdé-</td>
<td>mʃé-</td>
</tr>
<tr>
<td>N</td>
<td>kané-</td>
<td></td>
<td>pʰide-</td>
<td>mʃé-</td>
</tr>
<tr>
<td>NE</td>
<td>kána-</td>
<td></td>
<td>fuʔdú-</td>
<td>méhʃe-</td>
</tr>
<tr>
<td>E</td>
<td>qa:né-</td>
<td>bi:dí[:l]</td>
<td>pʰu:dí-</td>
<td>mi:ʃé-</td>
</tr>
<tr>
<td>SE</td>
<td>qné-</td>
<td>bdéy-</td>
<td>-di-</td>
<td>mxé-</td>
</tr>
<tr>
<td>PP</td>
<td>*qa:-né-</td>
<td>*bi-ʔdí-</td>
<td>*pʰu-dí-</td>
<td>*mi-hʃe-</td>
</tr>
</tbody>
</table>

*like disyllabic roots, these take stress on second syllable of the word*
Post-tonic syncope

• deletion of a vowel in the (unstressed) third syllable
  – complements evidence that stress was not initial
• still-productive syncope in S:
  – /ʔa-htʃa-mok-a/ → ʔahtʃámko ‘flew into’
  – can’t depend on modern penultimate stress: *ʔahtʃamóko
• similar pattern, but lexicalized, in K kinship
  – mi-tʃ’ikí ‘your younger sibling’ < *mi-tʃ’íki?
  – mi-tʃú-tʃ’ki ‘your sister’s son’ < *mi-tʃú-tʃ’iki?
• might also explain an ablaut pattern in K kinship
  – stem with long vowel if monosyllabic prefix, otherwise short
    • mi-de·ki´ ‘your older sister’ < *mi-dé:ki?
    • dikí-n’ ‘my older sister’
    • miyá:-diki ‘his older sister’
  – i.e. long vowel if stem starts at second syllable
### Monosyllabic stems

<table>
<thead>
<tr>
<th></th>
<th>‘come’</th>
<th>‘hear’</th>
<th>‘leave’</th>
<th>‘claw’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>waːd-u´</td>
<td>ŋotʃ-</td>
<td>q’a:-´</td>
<td>heːtʃ´</td>
</tr>
<tr>
<td>S</td>
<td>hwáːd-u</td>
<td>ŋoːtʃi-</td>
<td></td>
<td>héːtʃ´</td>
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<tr>
<td>C</td>
<td>wáːd-</td>
<td>ŋóːtʃ-</td>
<td></td>
<td>?éːtʃ´</td>
</tr>
<tr>
<td>N</td>
<td>wáːd-</td>
<td>ŋóː:-</td>
<td>k’á-</td>
<td>héts’</td>
</tr>
<tr>
<td>NE</td>
<td></td>
<td></td>
<td></td>
<td>héːtʃ’a</td>
</tr>
<tr>
<td>E</td>
<td>wáːd[uːki]</td>
<td>ŋóː:kʰ</td>
<td>q’á-</td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td></td>
<td>(xkó-)</td>
<td>q’á-</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>*(h)wáːd-</td>
<td>*ŋóː:k-</td>
<td>*q’á(:)-</td>
<td>*héːts’</td>
</tr>
</tbody>
</table>

*here stress is on the first syllable – it can’t be assigned past the root*
Proto-Pomo stress

• appears to be regular
  – though best evidence comes from nouns

• stress on 2nd syllable of word
  – whether prefixed or not
  – \( σσ́, σ{σ́ \)

• but stays on an initial monosyllabic root
  – \( σ{σ́ \)
  – no reconstructed prefixed roots with two syllables
    • but in the relevant daughter languages,
      • stress remains on first root syllable regardless of word length

• initial stress in vocative of kinship terms?
  – limited evidence; will set this aside
Analysis of PP stress

• prefixed stems could refer to morphology
  – stress aligned with left edge of root: \( \sigma\{\sigma\sigma \)
  – possible source of “2nd syllable” generalization
  – but once established, it requires a phonological analysis

• no reference to vowel length or closed syllables
  – requires left-edge extrametricality: \(<\sigma>(\sigma\sigma \)
  – or quantity-insensitive iamb: \((\sigma\sigma)\sigma \)
  – either approach is uncommon and marked

• monosyllabic stems are also aligned to the root
  – there just happens to be no prefix: \{\sigma\}...
  – in the relevant daughter languages, stress remains on this root syllable despite addition of suffixes
Modern stress: Eastern Pomo

- mainly the same as proto language
- second syllable of most words
  - including all prefixed roots
  - alternating secondary stress
- first syllable
  - monosyllabic roots (some by aphesis)
  - certain disyllabic stems have to be lexically marked
Eastern Pomo second syllable

• instrumental prefixes are now CV:
  – many of these derive from *CV{hCV or *CV{ʔCV
  du:{qá}ṭ’ki: ‘pull off, pluck’
  ma:{t’ó}qaja ‘roasted (the meat)’
  ka:{lú}:ski: ‘sit on something sticky’
  bi:{dí}m ‘hold in hand without moving’
  – no reference to vowel length in placement on 2nd syllable

• similar in most words with no apparent prefix
  bu:ráqal ‘bear’
  di:lé ‘forehead’
  qa:lí ‘sky’
Eastern Pomo initial stress

• unpredictably on first syllable for certain words
  káju ‘at the beginning’
  dú:ʃux ‘quiet’
  ts’á:mal ‘fly’
• some are historically from aphesis
  ṭʰíja ‘big’ < *ʔahṭʰíj
  ṭʰó:no ‘seaweed’ < *ʔo:ṭʰóno
• all the numbers have initial stress
  k’áli ‘one’
  lé:ma ‘five’
  ts’á:di ‘six’
  hádaqal ‘ten’
Eastern Pomo loanwords

• some likely from neighboring languages
  háju ‘dog’ (widely diffused)
  hí:baja ‘men’ (identical to NE Pomo)
• initial stress in more recent loanwords
  – similar to SE Pomo; some perhaps borrowed through it
  káhonʔ ‘box’ < Sp. cajón
  kálawa ‘nail’ < Sp. clavo
  pásalʔ ‘to visit’ < Sp. pasar
  pápelʔ ‘paper’ < Sp. papel
  rí:koʔ ‘rich’ < Sp. rico
• whatever the source, they exist
  – lexical exceptions to left-edge extrametricality?
Eastern Pomo initial CVC

• initial CVC is not frequent, but takes stress
  – could stress be attracted to VC but not to V: ?
  – perhaps (historical) compounds and reduplicated roots, now lexicalized

bóʔʰqo ‘forearm’
líkʰlikʰ ‘sparrow hawk’
tíχtix ‘snipe’

• verbs with initial CVC are monosyllabic roots
  – therefore expect initial stress anyway

{ká}mli: ‘tip over, wreck (a car)’
{ʔé}ʔʃʰki: ‘sneeze’
Eastern Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root
• lexical exceptions
  – extrametricality blocked for certain roots
    • more common than in some other Pomoan languages?
  – includes classes such as loans and numbers
• heavy initial syllables
  – might be true weight sensitivity
    • though not evident in other contexts, or with CV:
  – probably just marked as exceptions like the other cases
Modern stress: Northern Pomo

- similar to proto language
- second syllable of disyllabic roots
  - as well as prefixed monosyllables
- first syllable of monosyllabic root
  - including where aphesis has occurred
- pitch accent realization
  - predictable based on syllable structure
Northern Pomo second syllable

- disyllabic (or longer) root
  - \{diléj\} ‘all’
  - \{batʃ’ówa\} ‘angelica’
  - \{da:wák\}a ‘go out’
  - \{duhú\}doj ‘they say he left’
  - \{kawí\}namjatʃuʔ ‘of the child’
  - \{miná\}tʃinhe ‘I heard (the baby) cry once’

- prefix, yielding disyllabic stem
  - si\{jú:\}tʃin ‘recognize taste (of liquid)’
  - mi\{ʃé:\}tal ‘be feeling (emotion)’
  - da\{séj\} ‘wash’
  - da\{ts’áp\}na ‘must have slapped’
Northern Pomo first syllable

• monosyllabic root
  \{pʰó\}moʔo  ‘marry each other’
  \{tʰáʔ\}a  ‘play (COLLECTIVE)’
  \{tʃá\}nhe  ‘I heard it jump (in the water)’
  \{lók\}ta  ‘fall, drop multiple times’

• historical aphesis
  \{má:ta\}  ‘woman’  < *ʔimá:ta

• other reasons, such as onomatopoeia?
  \{xó:ta\}manhe  ‘I hear him snoring’

• analysis has to permit some exceptions
  – no initial extrametricality, or an underlying stress
  – but most forms can be generated quite regularly
Northern Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root

• exceptions appear to be quite limited
  – though stress is often not written in sources

• realized with predictable pitch accent
  – rising on short V and most VC
  – falling on short VC = laryngeal or ejective
  – falling on V:
Modern stress: Central Pomo

- similar to proto language
- second syllable of disyllabic roots
  - as well as prefixed monosyllables
- first syllable of monosyllabic root
  - including where vowel deletion has occurred
  - therefore more often word-initial
Central Pomo second syllable

• disyllabic (or longer) roots
  {matúl} ‘old lady’
  {maʔá} ‘food’
  {masá:nja} ‘white (person)’
  {tʃa:nó}:n ‘talks’
  — no effect of vowel length

• syllabic prefix, yielding disyllabic stem
  ba{yí}:tʃ’ ‘learned to talk’
  jaʔá:ma:tʃatʃ ‘(we) used to gather’
  qa:{wá}tan ‘eat (habitually)’
  da{lí}da{lí}w ‘wave the hand’
Central Pomo first syllable

- **monosyllabic roots**
  - \{lów\}aːtʃ’aːtʃ’ ‘(we) don’t talk’
  - \{mí\}taq’ ‘they say’
  - \{tʃáːʔ\}jem ‘old man’

- **historical vowel deletion, in prefix or within root**
  - m\{ʃé\}m\{ʃε\}w ‘sniff at’< *mihʃé-
  - \{díː\}jaw ‘carried (the body)’
  - \{ʔwéni\} ‘yesterday’< *duwéni

- **initial in loanwords, or other reasons**
  - \{sómleːlo\} ‘hat’< Span. sombrero
  - \{háju\} ‘dog’ locally diffused
  - \{híntil\} ‘Indian’
  - \{ʔúdaːw\} ‘lots’
Central Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root

• lexical exceptions
  – extrametricality blocked for certain roots
  – predictable in presence of initial CC cluster
    • extrasyllabic C blocks extrametrical syllable?

• more examples of stress on first syllable of word than in E and N
Languages with 2nd syllable stress

Proto-Pomo

Western Branch

Southern Group

Kashaya  Southern  Central  Northern  Northeastern  Eastern  Southeastern
Modern stress: Southeastern Pomo

- stress is always initial
  - historical loss of first vowel or syllable
- remains on same syllable as in proto language
  - but simpler synchronic generalization
- no long vowels
  - the only Pomoan language to lose distinctive length
Southeastern Pomo diachrony

• initial unstressed syllables lose vowel
  *seʔé > sʔé ‘chaparral’
  *nahpʰó > mfó ‘people’
  *mihján > mján ‘throat’
  *baːlaj > bláj ‘blood’

• complete aphesis with laryngeal onset
  *hiːmó > mó ‘hole’
  *hiʔbál > bál ‘tongue’
  *ʔohó > hó ‘fire’
  *ʔahχáj > χáj ‘wood’

• initial stressed syllables are maintained
  *tʃ’áj > ts’áj-ts’aj ‘scrub jay’
  *q’á(:)- > q’á- ‘leave (behind)’
Southeastern Pomo first syllable

• native words with initial stress
  – regardless of word length
  xéla       ‘friend’
  xélataj    ‘friends’
  tsáqlamat  ‘it flew to the ground’
  dáqalhojqat ‘(one) gathers into pile’
  háliqmattat ‘(two) discuss, plan’

• same in Spanish borrowings
  – regardless of stress in source language
  sómlilu     ‘hat’       < sombrero
  mántikija   ‘butter’    < mantequilla
  ?áwha       ‘needle’    < aguja
  pílatu      ‘dish’      < plato
Southeastern Pomo secondary

• evidence only for a stress on the first syllable
  – no report of iterative secondary stresses
    (háliq)mattat ‘(two) discuss, plan’
    *? (háliq)(màttat)
• secondary stress in compounds
  – left-headed at higher level
    χό kàleta ‘train’ (fire wagon)
    ṭ’ó qàtslulu ‘collarbone’
    sápatu kìn ‘shoestring’
• very simple generalization of “first syllable”
  – loss of unfooted material at the beginning of the word
  – or simply “pre-tonic” to be neutral about footing
Degenerate feet

• limited evidence for syllable weight
  – vowel length from proto-language was lost
    • although marginal in later borrowings
  – copious degenerate feet on short open syllables
    • including under clash in compounds
• but with directional prefixes, they are avoided
  mó-ʃnèt = (móʃ)(nèt) ‘put belt on someone’
  mó-net = (móne)t ‘lean something against’
• subminimal feet are cross-linguistically disfavored
  – already common in Proto-Pomo?
    • e.g. *ʔah(šá) > (xá) ‘fish’
  – even more common with the loss of vowel length
    • though SE still avoids them in limited circumstances
Modern stress: Northeastern Pomo

• less consistent with proto language
• often second syllable of disyllabic roots
  – as well as prefixed monosyllables
• but first of many disyllabic roots
  – apparently prior to aphesion
• tendency to penult?
  – open questions
Northeastern Pomo second syllable

- in some disyllabic (or longer) roots
  - matches proto stress
    - {ʃahkó}ka: ‘grasshopper’ < *ʃahqót
    - {himá:ta} ‘woman’ < *ʔimá:ta
    - {ʃiʔbá} ‘body’ < *ʃiʔbá
    - {ʔahá:} ‘wood’ < *ʔahχáj

- syllabic prefix, yielding disyllabic stem
  - fu{ʔdú} ‘float’ < *pʰu-ʔdú
  - Jo{ʔk’óm}on ‘cut off’
  - da{ʔdí}ma ‘lay (rock) down’
Northeastern Pomo first syllable

• in some disyllabic roots
  – has shifted leftward from proto stress
    \{dúwe\} ‘night’ < *duwwé
    \{béhʃe\} ‘deer’ < *bihʃé
    \{táno\} ‘speech’ < *kahnó
    \{ʔóho\} ‘fire’ < *ʔohχó
    \{máʔa\} ‘acorn’ < *maʔá

• monosyllabic roots
  – often from aphesis, based on proto stress
    \{ʔá\} ‘horn’ < *haʔá
    \{fó:\} ‘magnesite’ < *ʔipʰó:(l)
  – no aphesis if stress shifted leftward: \{ʔóho\}
Northeastern Pomo variation

• same forms with stress on 1st or 2nd
  – cited without a difference in context

ʃúʔu-ka: ~ ʃuʔú-ka:  ‘coyote’
ʃími: ~ jimí:  ‘bow, gun’
málaʔ ~ maláʔ  ‘ashes’
béhʃera ~ behʃéra  ‘hug’
ʃúhṭan ~ ʃuhṭán  ‘open (a door)’
dúhʃu-ka: ~ duhʃú-ka:  ‘grayback (insect?)’
Northeastern Pomo penultimate?

- possible tendency for penultimate stress
  - based on shift under suffixation
    - jíma: ‘sleep’
    - jímá:-ka: ‘go to sleep!’
    - má:ti: ‘day’
    - ma:tí-min: ‘sunrise’
    - húʔba: ‘tongue’
    - huʔbá:-wi: ‘with the tongue’
    - bóʔlau ?úla: ‘puppy’ *(dog child)*
    - boʔláu-ka: ‘dog’
Northeastern Pomo non-shifting

- but some root stress appears to be stable
  – if we can rely on somewhat limited data
  
  $\text{ʧ}’\text{įjit taʔdéi}$  
  $\text{ʧ}’\text{įjit-ka:}$  
  $\text{ʃúʔut diṭʃó:tʃo}$  
  $\text{ʃúʔut-ka:}$  
  $\text{fuléy-en}$  
  $\text{tfjí:ya fuléy-kalba}$  
  $\text{tuhúl-a?}$  
  $\text{tuhúl}$  

  ‘bird nest’  
  ‘bird’  
  ‘snake’s rattle’  
  ‘(rattle)snake’  
  ‘to burn’  
  ‘let it burn’  
  ‘north wind’  
  ‘towards north’
Northeastern Pomo transcriptions

• some inconsistency in transcriptions
  – really two stresses in all these words?
    ʃímitiʔ    ‘did (you) listen?’
    ʃimitíʔle    ‘(what) do (you) hear?’
    ʃimitílda    ‘did (you) hear?’
    ʃimitka:li ~ ʃimitká:li    ‘so that (you) will hear’
• penult in long word may not be the only stress
  – are these words stressed on both 1st and penult?
    dúʔbutkuʔle    ‘did (you) hide it?’
    duʔbutkú:tf’a    ‘hide yourself!’
Northeastern Pomo rhythm?

- may shift between 1st and 2nd syllables
  – depending on overall rhythm of sentence
  ōlímɑ  ‘sit down!’
  ōámɑ ōlímɑ  ‘you sit down!’
  máhku:i  ‘handkerchief’
  tína: máhku:i  ‘kerchief for head’

- possible effect of syllable weight
  hímo  ‘hole’
  hímo-wa  ‘out of a hole’
  tína:  ‘head’
  tína:-wa  ‘from the head’
Northeastern Pomo variation

• tentative hypothesis
  – rhythm does influence shifting stress
    • also variation in left- or right-headed word?
  – between 1st and 2nd, with iterative effects
  – possibly also affected by vowel length
  – and perhaps a particular social meaning
    • a system in transition?

hájo: ŋoʔk’ómon  ‘cut off a leg’
héle ŋoʔk’omú:tʃ’a  ‘cut off your hair!’

• but at present, pattern remains uncertain
Modern stress: Southern Pomo

- regular penultimate stress
  - reported to be on the phrase, not just the word
- outlier in Pomoan
  - right-orientation
  - all others are left-oriented (but NE?)
- secondary stress
  - on alternating syllables preceding the penult
Southern Pomo penult

- main stress on penult
  - (kʰáʔbe) ‘rock’
  - kʰaʔ(bé-ʔwan) ‘rock-DET.OBJECT’
  - kʰaʔ(bé-jej) ‘Rock (Man)-AGENT’

- clashing secondary stress in trisyllables
  - transcribed explicitly for just a few words
  - but described as a general pattern
  - (bù:)(ṭáka) ‘bear’
  - (kit)(tsídu) ‘small (COLLECTIVE)’
Southern Pomo phrasal

- phrasal stress
  - can include enclitics and multiple words
    (bàh)(tʰé=k’o) ‘with many’
    (sí:ma) (pʰìʔt’a)(wáʔ=to) ‘I feel sleepy’
    (hùʔt’a)(yì:li)(wáʔ=?a) (ʃó:tʃiw) ‘when it came to make (noise) I heard it’

- alternation in stress due to phrasal context
  - I’ll return to this later
    (béhše) ‘deer’
    beh(šè dah)(lá:li) ‘deer, I think’
Southern Pomo analysis

- quantity-insensitive trochees, primary stress at right
  \((\dot{\sigma}\sigma) (\dot{\sigma}\sigma) (\sigma\sigma)\)
  - iterative from right to left, a very common pattern
- can be constructed across phrases
  - shares this property with Kashaya
- antepenult in trisyllables is stressed, and typically heavy
  \((\dot{\sigma}) (\sigma\sigma)\)
  - historically, to meet a minimum size of two moras?
  - if correct, would simplify some reconstructions
- not clear whether this foot occurs in longer words
  - theories would generally predict it
    \(? (\dot{\sigma}) (\dot{\sigma}\sigma) (\sigma\sigma)\)
Modern stress: Kashaya

- most complex of all
  - but still left-oriented
- iambs from the left
  - first syllable is extrametrical
  - unless that would leave the root unfooted
- clear quantity sensitivity
  - unlike the other languages
  - special role for long vowels
Kashaya iambic feet

• extrametricality of first syllable by default
  – stress on 2nd syllable if heavy, else 3rd
  – iambic lengthening of (most) stressed vowels
    • main evidence for secondary stress feet
• true of unprefixed disyllabic roots
  \{qaʔtʃ’áṭ’\}kʰetʰin ‘shouldn’t cry’
  \{qaʔtʃ’at\á:dutʃe:du ‘used to cry and cry’
• as well as all prefixed roots
  – whether the root is monosyllabic or longer
    tʃa{qʰám}muʔ ‘cut pieces apart from each other’
    tʃa{qʰam}á:lawi:biʔ ‘start to cut downward’
    bi{lukú}mciʔ ‘eat with one’s mouth closed’
Kashaya monosyllabic root

• extrametricality is blocked
  – as in the other Pomoan languages
    {kél}mula:dutʃe:du  ‘keep peering around’
    {mo}mú:liʃ’e:du    ‘run in circles’
    {tʃad}ú:tʃedun     ‘while looking’

• but the root itself is often unstressed
  – the foot (not the stress) has to overlap the root
  – evaluated via the vowel, as the stress bearing unit
    * {tʃad}utʃé:dun  =  tʃa(dutʃé:)dun

• the other languages keep stress on the root
  – same formal statement if they are trochaic
Kashaya analysis

• iambic feet from left to right
  – extrametricality by default
• retains much of general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root
• syllable weight plays central role
  – unlike in most of the other languages
• lexical exceptions
  – extrametricality blocked for a few roots
  – also fixed stress on some loans
Kashaya phrasal stress

- two words grouped as one stress
  - optional but common
    (ma qáʔ) (tʃ'aṭem) ‘when you cry’
    <ʔo>(ho dúh)(samu:)tʃi ‘tend the fire!’
    <ʔah>(qʰa bá)(tʰe:)=li ‘with lots of water’

- most often yields initial stress in second word
  - influence of initial stress in other languages?

- more complex pattern with long vowels
  - accent shifts from CV: to following foot
  - doesn’t change foot structure; will set aside
Kashaya degenerate feet

• final stress on disyllabic words
  \(<\text{ʔah}> (q^h\acute{\text{a}})\) ‘water’
  \(<\text{qa}> (\text{né})\) ‘bite!’

• phrasal grouping avoids this
  \(<\text{bih}> (\text{ʃé})\) ‘deer’
  \(<\text{bih}> (\text{ʃe bó})(?\text{otaʔ})(t^h\text{uʔ})\) ‘don’t hunt deer!’

• degenerate foot can be unaccented
  \(<\text{bih}> (\text{ʃe}) <\text{bo}> (?\text{otáʔ})(t^h\text{uʔ})\) ‘don’t hunt deer!’

• strategies to minimize role of such feet
  – even though they are often created
# Summary of stress patterns

<table>
<thead>
<tr>
<th>Stem</th>
<th>Disyllabic</th>
<th>Prefixed</th>
<th>Monosyllabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>{σό}</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>E</td>
<td>{σό} (~ {όσ})</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>N</td>
<td>{σό} (~ {όσ})</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>C</td>
<td>{σό} , {Cό}</td>
<td>σ{ό} , C{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>SE</td>
<td>{Cό}</td>
<td>C{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>NE</td>
<td>{σό} ~ {όσ} ?</td>
<td>σ{ό} ?</td>
<td>{ό}σ ?</td>
</tr>
<tr>
<td>S</td>
<td>{σό}σ , {όσ}</td>
<td>σ{ό}σ , ó{σ}</td>
<td>{σ}όσ , {ό}σ</td>
</tr>
<tr>
<td>K</td>
<td>{σď}σ , {σď}ό</td>
<td>σďσ , σďό</td>
<td>{ď}σ , {ď}ό</td>
</tr>
</tbody>
</table>
Diachronic tendencies

• shift from 2nd to 1st syllable
  – scattered examples in E, N, C
  – common in NE

• deletion to yield initial stress
  – with laryngeal onsets in E, N, C, some NE
  – vowel after nonlaryngeal in SE, some in C

• major changes in two languages
  – penultimate in S
  – iambic in K

• does language contact explain some of it?
Languages near Pomoan

- **Athabaskan**
  - Kato
- **Yuki-Wappo**
  - Coast Yuki, Yuki, and Huchnom
  - Wappo
- **Wintun**
  - Nomlaki (N. branch)
  - Patwin (S. branch)
- **Miwok-Costanoan**
  - Lake Miwok
  - Coast Miwok
Stress in Kato (or Wailaki)

- no description of stress in Kato
  - not even marked
- data for closely related Wailaki
  - 1st syllable of root
    - also of word, for basic nouns
  - can be preceded by many prefixes
    - typical Athabaskan verb structure
Yuki-Wappo languages

- Yukian
  - several closely related languages
  - stress usually on first syllable of the root
    - excludes (rare) prefixes
  - some disyllabic roots have stress on second syllable
  - limited pitch accent
- Wappo
  - stress on first syllable of the root
    - excludes prefixes, more common than in Yukian
Wintun languages

- **Nomlaki**
  - no stress description
- **Wintu**
  - just north of Nomlaki, and grouped with it
    - so use as stand-in
  - two-syllable window
  - stress on second syllable if heavy, otherwise first
- **Patwin**
  - again, stress on first or second syllable
  - seems to correlate fairly well with syllable weight
Interim summary

- Kato, Wailaki not especially relevant
  - first syllable of root is like other languages
  - long string of prefixes is only in Athabaskan
- Yuki-Wappo stresses first root syllable
  - may especially have affected NE
  - Yuki might also relate to pitch accent in N
- Wintun has first/second syllable stress
  - with important role for syllable weight
  - potentially germane to NE
- of course, Pomoan may have influenced them
  - such as second-syllable stresses in Yukian
Western Miwok

- two nearby varieties
  - Lake Miwok adjacent to E and SE
  - Coast Miwok adjacent to K and S
- Bodega Miwok
  - northwest dialect of Coast Miwok
  - immediately adjacent to K and S
  - discussion based on forms in dictionary
    - (Callaghan 1970)
Miwok stress

• reported Lake Miwok stress (Callaghan 1971)
  – stress on leftmost CVV
  – otherwise on leftmost CVC
  – otherwise on initial syllable
• data suggests that stress rarely moves past the second syllable
  – consistent with Proto-Pomo
  – and in E and NE nearby
• Bodega Miwok is similar to Lake Miwok, except that
  – “stress may shift to the penult”
• important since S has penultimate stress
  – but what exactly does that description mean?
Bodega Miwok stress

• disyllables have initial stress unless final long vowel
  kóle   ‘grass’
  kénum  ‘every’
  hú:ma  ‘fish eggs’
  ?ellé: ‘fish’

• longer words mostly penultimate
  – rightward shift under suffixation

  támal   ‘west, coast’      tamál-to      ‘on the coast’
  kó:ja   ‘girl’            ko:já-ko      ‘girls’
  jólum   ‘eat’             jolúm-ne      ‘feed’
  táwuh   ‘think, guess’    tawúh-mi      ‘guess!’
  tólpá   ‘answer’          tolpá-mmi    ‘answer!’
  tollé-pa ‘let go of’      tollepá-mmi  ‘let go of it!’
Bodega Miwok extrametricality

• certain suffixes appear to be ignored for stress
  – stress is antepenultimate unless the penult is heavy

  lú:ţa          ‘poke (a fire)’
  lu:ţá-ja      ‘a poker’
  lú:ţa-<ṭi>    ‘poke’ (PERFECTIVE)
  júlu          ‘be angry’
  jullú-m-<ṭi>  ‘quarrel’ (RECIP, PERF)
  kénne         ‘one’
  kenné-tto     ‘together’ (ALLATIVE)
  kénne-<wa>    ‘one place’ (LOCATIVE)
  kenne-wá-tto  ‘in one place’

• residue of unexplained exceptions
  – antepenultimate without these suffixes
  – penultimate on light syllable before these suffixes
Miwok and Southern Pomo

• random sample shows 89% penultimate stress
  – partly due to large number of disyllables
  – final long vowels are quite uncommon
• overwhelmingly one pattern in Miwok data
  – especially if take extrametricality into account
  – those suffixes excluded from penultimate domain
• appears to be the basis of S Pomo innovation
  – adjacency to this pattern is surely not a coincidence
  – past period of significant bilingualism?
• perhaps also related to ambiguities in S words
  – trisyllables with stress on second syllable
  – matches both inherited and penultimate analysis
Southern Pomo reanalysis

• texts in S show many trisyllabic words
  – ambiguous between “second” and “penultimate”
  $k^h_a:le?wan\ k\mu\ di:l^a ts'aw,\ k^h_a?bejej$
  ‘Rock broke all the trees by falling on them’
• reanalysis as penultimate system
  – suppose native speakers of Miwok marrying into Pomo communities
  – children exposed to both languages
  – or to Miwok-accented Pomo
Southern Pomo reanalysis

- stress in phrases possibly related to reanalysis
  - *<beh>(šé) original pattern
  - <beh>(šé) <dah>(lá:li) independent footing on 2nd
    - ~ beh(šé dah)(lá:li) or iterative from penult
  - (béhše) new independent pattern
- period of variation behšé ~ béhšé may even have
  - led to phrase-level pattern
    - speakers conceivably preferred the variant that led to better sentence rhythm
    - form in isolation then stabilized as penultimate
Kashaya reanalysis

• doesn’t abandon the old system like S does
  – but further develops it

• repeats what must have occurred in Proto-Pomo
  – assume Pre-Proto-Pomo was first-in-root: σ{ό} , {όσ}
  – later develops second-in-word for longer roots: {σό}

• likely a crucial role again for prefix structure
  – overwhelmingly common in verbs

• depends on ambiguous pattern in σ{ό}
  – 2nd in word, or 1st in root
Kashaya alignment

• new K system combines two patterns
  – left edge of root as reference point
  – assign stress to 2nd syllable
  – if prefixed, then this yields the 3rd syllable
• possible influence of Central Pomo
  – loss of many initial syllables: *mi{hʃé} > m{ʃé}
  – more stresses are initial in both word and root
• 1st or 2nd syllable counting from the root
  – depending on weight: mi{hʃé}C ~ mi{hʃe}σ
  – variation in 1st/2nd ⇔ differences in weight
Kashaya syllable weight

• introduction of true iambs
  – stress varies between 1st and 2nd, by weight
  – a crucial development
• no other nearby language has this
  – weight is relevant in Wintun and Miwok
  – but in quite different ways than in K
• internal development?
  – perhaps in context of ambiguity in analysis
    • 1st in root, 2nd in word > 2nd in root if 1st is light
• period of variation in stress location
  – children making sense of this via weight
Summary: Extrametricality

• Proto-Pomo had left extrametricality
  – this itself was probably an innovation
  – skipping of prefix > skipping of any first syllable
• some languages abandon this element
  – SE deletes the extrametrical syllable
  – S completely replaces the system
  – NE might have variable extrametricality
• majority of the languages maintain it
  – despite how marked it is
  – even more marked to have 3rd syllable stress in K
Summary: Degenerate feet

• Proto-Pomo had frequent degenerate feet
  – in disyllables with final CV
  – made necessary by extrametricality

• most languages maintain this element
  – SE develops even more since it loses vowel length
  – create more words shaped CV by aphesis
  – only S clearly avoids it, by footing both syllables
    • yet that required contact with Miwok, it seems

• two marked elements
  – both survive widely
  – support each other formally
Implications

• degenerate feet are clearly marked
  – if markedness has any effect, this should be penalized
  – yet they persist across time in nearly all the languages
  – just minor remedies in synchronic footing (SE, K)
• left extrametricality is quite rare
  – yet it survives in most of the languages
  – where it diminishes, could be due to contact
• special role for patterns in shorter, simpler words?
  – such as Southern béhʃe ~ behʃé
  – learned earlier
  – less morphological confounding
• language transmission here depends on what the child hears, not markedness biases
  – whether inherited or by contact
  – if these biases exist, they must be quite weak
Thank You!